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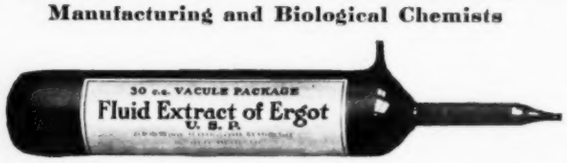

THE MODERN HOSPITAL

A Monthly Journal Devoted to the Building, Equipment, and Administration of Hospitals, Sanatoriums, and Allied Institutions, and to their Medical, Surgical, and Nursing Services

Vol. VIII *January, 1917* No. 1

A COMPLETE SUBURBAN HOSPITAL—THE MUHLENBERG

New Buildings and Reconstructed Pavilions Have Brought the Institution to a Point of High Efficiency and Inspiring Architecture

By F. J. HUBBARD, Trustee of the Hospital

STANDING in the middle of a well-shaded eleven-acre lawn on the outskirts of Plainfield, N. J., is a little group of buildings which we are pleased to call the *New* Muhlenberg Hospital; pleased to call it that not alone because some of its buildings are new and all have been overhauled, but because we feel that we have provided every need of a general hospital, and that the provisions are in good balance for the needs of a community like Plainfield.

Indeed, in all our investigation of hospitals we found none which quite fitted our ideal of a community plant, and which we endeavored to work out in making this the most *complete* plant that could be arranged for hospital work.

The ward capacity is generous in proportion to the total number of beds, and the wards are unusually attractive and have every desirable arrangement for service.

The private rooms and semi-private rooms are in a building by themselves, at one end of the group, thus facilitating the segregation of visitors to pay patients and to ward patients and separating the service, obviating a frequent cause of complaint where the service to ward and private patients is combined.

The obstetrical pavilion is at the other end of the group, and the inevitable noises from this building cannot be heard from any other building in which adult patients are cared for. The obstetrical pavilion has a delivery room, with complete sterilizing arrangements, enabling any kind of obstetrical or gynecological work to be done, and has private rooms, a ward, and a nursery, together with service rooms.

The main floor of the administration building is used entirely for administration, except that the nurses' dining room is on this floor. The second story of the administration building is devoted to children, and has a ward and private and isolation rooms. The babies' bath shown in the advertisement of the Leonard-Rooke Company in the May, 1916, issue of THE MODERN HOSPITAL was originally designed by the architects for this department, and has proved a very satisfactory fixture for the purpose.

The basement of the administration building is devoted entirely to the clinics, or out-patient department, and most satisfactory provision is made for general medical and surgical work—eye, ear, nose, and throat, orthopedic, dermatological, genitourinary, and dental clinic.

The operating pavilion contains the main and an auxiliary operating room, a general sterilizing room, an accident operating room, and an x-ray department. It is interesting to note that the safety operating lamp, equipped with both gas and electric light, was originated for this hospital.

The pathological laboratory is a pavilion devoted entirely to pathological work, and occupies a central position in the group, immediately opposite the operating pavilion.

The service pavilion contains the general kitchen and the special diet kitchen rooms, and, in an upper story, the rooms for the female help. All of the foregoing buildings are connected by corridor, thus forming one unit.

The laundry and power plant are contained in a separate building.

The nurses' home is a separate building where

practically every nurse has a separate room that is light, airy, well furnished, and having the attributes of a real home.

Isolation is provided for in a separate building on the premises.

Such, in general, is our present arrangement, but the history of the months on months of careful planning, investigation, and discussion which made this possible can never be written. No plan was ever finally adopted until it had been viewed and discussed from every angle and in the light of the successes and failures of similar institutions; then, after the board of governors had worked out the details, the medical staff were asked to express their views, which they did, freely and generously. The plans finally executed included a new private room pavilion, a new pathological laboratory, and a new obstetrical pavilion, while the old private room section was so completely reconstructed that you may well include a new children's ward in this category. The general offices, dining rooms, kitchen, diet kitchen, wards, out-patient department, x-ray department, and operating pavilion were practically rebuilt and brought up to date, and, while a description of this work would undoubtedly prove of interest to those having similar problems of old buildings to meet, it would probably unduly lengthen this article to include in it all of such work.

Fig. 1. Muhlenberg Hospital. Administration building.

Muhlenberg was rebuilt ten or twelve years ago on the pavilion plan, and it seemed wise, considering our available grounds and the condition of our plant, to continue this scheme and erect one building for private patient work exclusively, and the result is a three-story fireproof building of red tapestry brick and limestone trimmings of most pleasing appearance. In size this building is practically 40 by 100 feet, with a central corridor extending the full length of the building, from which the rooms open on both sides, with the result that every room has excellent light and ventilation.

On each floor there is a generous solarium inclosed in glass and steam heated in winter, and so arranged that it can be entirely opened up in summer. These are fitted up with rugs and easy chairs to make them as homelike as possible, and are a source of delight to convalescents. The rooms are all of good size, and some even generous in their proportions, with bath and other rooms connecting. These rooms en suite have been in almost constant demand, even though they were priced considerably higher simply because of the luxury.

Each floor has two general toilets and baths, one each for men and women, a slop sink room for the maid and a commodious duty room for the nurses' work, as well as a diet kitchen. These diet kitchens are all connected by dumbwaiter, so that food from the general or special kitchens

Fig. 2. Muhlenberg Hospital. Closson-Edgerton maternity building.

is readily and rapidly distributed. Each diet kitchen is equipped with a modern steam table and gas hot plate, a sink with hot and cold water, commodious dish closets, and white porcelain refrigerators.

The furniture in the nurses' duty room is movable, and of enamel and glass, the only stationary objects being the sinks and some marble shelves, unless we include the steam warming closets.

The floors and wainscoting of the service rooms

Fig. 3. Muhlenberg Hospital. Group of buildings.

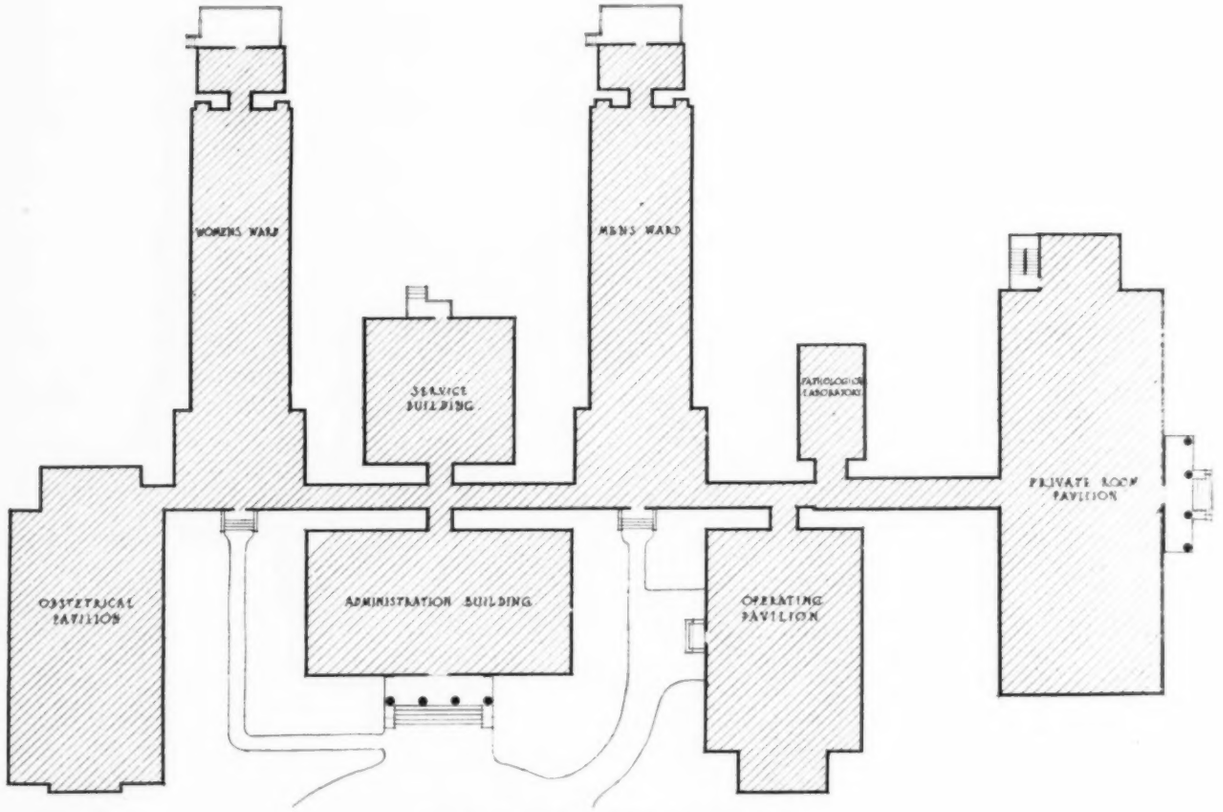

Fig. 4. Muhlenberg Hospital. Block plan.

and baths are of tile, while the floor and base of all corridors are also tile. They are in perfect condition, are easily cleaned, and are most satisfactory. This question of flooring is one of the most vexatious for, and on which there seems to be the most divergence of opinion among, hospital people. We settled it as above, with oak floors, wax finished, in all private rooms. In the wards and old parts of the hospital, where we had North Carolina wood floors to contend with, we covered them with imported battleship linoleum, cemented down over building felt, and I want to testify that our floors are a delight to everyone who is concerned with them.

Fig. 5. Muhlenberg Hospital. Closson-Edgerton maternity building. First floor plan.

The trim throughout the new buildings is quartered oak, flat, with rounded corners, and finished with the slightest stain in rubbed oil. It is readily cleaned, and is decidedly attractive in appearance. The walls of rooms and corridors are painted a flat light buff tint, while all the work and utility rooms are painted white and enameled.

The patients' signal system is a light controlled by a push-button on a flexible cord at the patient's hand. The light shows not only over the patient's door, but at the nurses' desk in the hall, in the nurses' duty room, and in the diet kitchen, and in addition to these places, at the desk on each of the other two floors; in this way it is impossible not to reach the nurse, and there is no noise or confusion of ringing bells.

The third floor of the administration building is given up to semiprivate rooms, and every comfort

provided for the private rooms is available here, except that from three to six patients are assigned to the large rooms. There is no slightest suggestion of the public ward about these rooms, and they have an atmosphere of comfort which gives them great demand.

The obstetrical pavilion, which, as noted above, is at the extreme other end of the group from the private room pavilion, is finished in exactly the same manner as the private room pavilion.

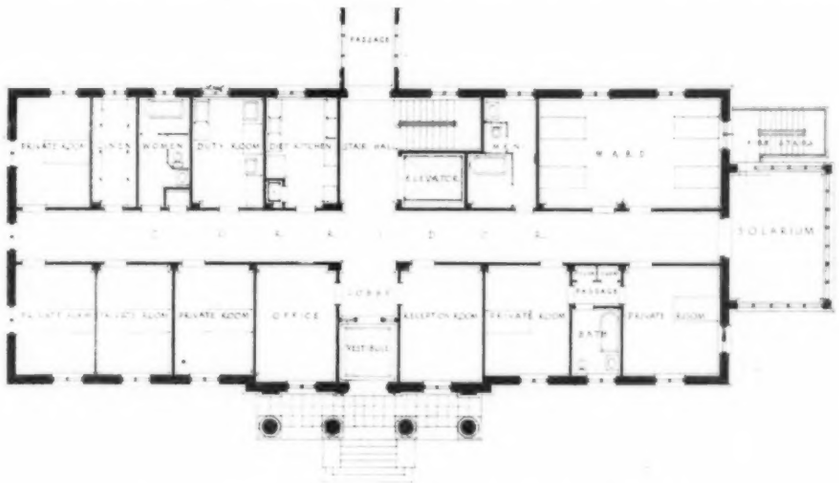

Fig. 6. Muhlenberg Hospital. Private room pavilion. First floor plan.

The whole scheme of the board of governors in constructing this modern plant of 110 beds was twofold—first, a well-rounded plant, with every modern equipment within our means, for the care of the sick of our community, who could not otherwise have the conveniences necessary for the recovery of their health, and second, the provision of such a high order of accommodations for those who can afford to pay that they would be both attractive and profitable, and thus help carry the burden of those unable to pay. Every effort was made in its design, and every effort is made in its management, that the service of this hospital shall be quiet, efficient, and as nearly homelike as possible, and all classes of patients are constantly showing their appreciation of the efforts in these directions.

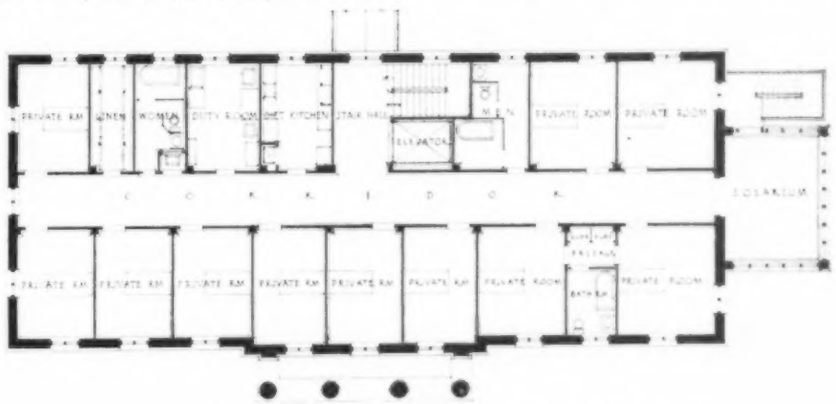

Fig. 7. Muhlenberg Hospital. Private room pavilion. Second floor plan.

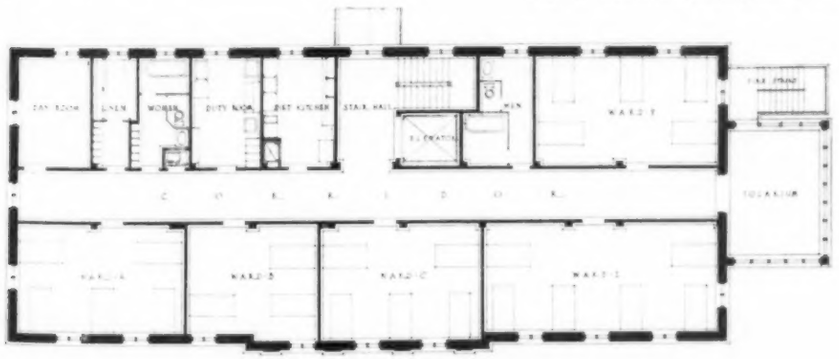

Fig. 8. Muhlenberg Hospital. Private room pavilion. Third floor plan.

Of course, no group of buildings can be thrown together and then left to manage themselves and be called a success as a hospital, and Muhlenberg has always been particularly fortunate in having a board of governors of the highest order, who have been imbued with the love of service and have spared neither time, money, nor effort to bring the hospital to the highest possible state of efficiency. While there may have been limitations of opportunity and of finances, there never was a time when this standard was not held high.

During the interim between the monthly meetings of the board, its powers are vested in an executive committee, which meets every two weeks and divides its labors into such subcommittees as committee on physicians, laboratory, dispensary, ambulance, buildings and grounds, housekeeping, and bills and supplies. This results in keeping the various members in close touch with the work of the institution, and I venture the assertion that there are few hospitals where the governors have a more intimate acquaintance with the actual physical property, or of the needs of

the work, than may be found in Muhlenberg Hospital.

Under the executive committee the superintendent has entire charge of the institution, except in matters pertaining to "the medical care of patients." The personnel of this committee is continued, with slight changes, from year to year, so that there is always a preponderance of the "old guard" on duty, having in mind not only the policy of the board, but a knowledge of the mistakes and failures, as well as the successes, of past years to guide them, while at the same time there is coming on enough new blood to take up and carry on the work without a break. That this method spells success we are prone to believe from the results obtained.

Those of us who have been connected with any department of hospital work for any length of time, whether medical or administrative, soon come to appreciate the constant study and research that is necessary to keep up with the ever-changing needs of medical and surgical work, and that Muhlenberg has no regrets after two years of occupancy of its new plant we attribute to the painstaking care in using the knowledge gained by years of study of our particular problems, as well as hospital problems in general, and to the grueling discussion every point had to undergo before adoption. And, then, we were fortunate in having the services, as architects, of Messrs. Crow, Lewis & Wickenhoefer, whose knowledge of hospital requirements was extensive, and whose patience in working up plans with the committee was never exhausted.

SUCCESSFUL MEDICAL TREATMENT IN CHRONIC ALCOHOLISM

An Outline of Practical Procedure as Developed in the Work of a Hospital for Drug and Alcoholic Addiction—Necessity of Intelligent Sociology in Solving the Alcoholic Problem

By CHARLES B. TOWNS, Charles B. Towns Hospital, New York

THE editor of THE MODERN HOSPITAL has asked me to outline to the readers of this publication the medical treatment and care of the alcoholic as carried out in the Charles B. Towns Hospital for Drug and Alcoholic Addiction, and this I very gladly do.

As stated in the previous article, which appeared in the December number of this publication, the alcoholic is the most abused and neglected of sick patients. The state and municipal authorities have never given alcoholics proper classification, proper medical treatment, or rational sanative care, and for that reason this class of people has become one of the largest responsibilities with which the authorities the country over has to deal. The lack of medical information and social intelligence in dealing with the sick of this class has had appalling results; for not only have state and municipal authorities in courts of law, penal institutions, hospitals, and insane asylums been wholly at sea in this matter, but organized charities and social service workers the country over have been wholly unable to deal with it intelligently. I reiterate here the statement which I made in the previous article with respect to the treatment of the alcoholic—that until alcoholic patients are properly classified and subsequently receive definite medical treatment for alcoholism, no intelligent accounting can be made for the patient either as to his or her physical or mental condition. Nor can any possible good come out of the usual methods resorted to, such as deprivation, penalization, the laying of fines, the humiliation of being lectured from the bench by some magistrate, and so on to the foolishly futile end. On the other hand, if this work were taken up from its beginning as it should be and intelligently worked out, the beneficent influences of such a course would be felt practically in every walk and station of life.

While I do not belong, and never expect to belong, to any humanitarian society or any prohibition organization, I here put myself on record as saying that I think that society, in one way or another, is wholly to blame for this alcoholic problem, and that it is directly responsible to those unfortunates who for any reason lose control of themselves from the use of alcoholic stimulants. Instead of treating them as sick people and doing something definite to help them, the treatment accorded to them at the present time is merely making them lifelong burdens to themselves and to the social body. I hope in this article to put those institutions that have to do with this type of patient, either receiving hospitals or institutions that undertake the permanent care of the mentally incompetent with alcoholic history, in the best possible way to deal with the medical and sociological problems involved in this momentous business. The institution's action and influence in this matter is going to have greater effect in bringing this work up to a scientific, medical efficiency point than any other single agency; and,

on account of the peculiar and even intimate relationship of this publication to the heads of such institutions, I am sure the columns of THE MODERN HOSPITAL are the most natural place for me to discuss the matter.

One of the most difficult tasks in my work has been that of educating the medical profession up to the point of seeing the difference between the hopeless attempt to get favorable results in dealing with the alcoholic through deprivation or through "tiding him over" temporarily by the use of sedatives, on the one hand, and, on the other, of dealing with him by definite medical methods that get definite medical results in an approximately definite time and that definitely renovate the patient, as it were, and effect a positive unpoisoning of his physical organism. The medical profession has not, as a whole, realized its great responsibility for not being able to classify these patients, nor has it, as a whole, appreciated the fact that the alcoholic cannot be arbitrarily deprived of his alcoholic stimulants without the doctor having to deal with delirium tremens and being required to handle all the unfavorable conditions that accompany such an attack.

Medical treatment of a definite sort is absolutely required. It has been, and it still is, a struggle to get the physician to understand that deprivation never removes the cause of alcoholism, or the desire or craving for stimulants. The alcoholic has a fair chance to make good only after he has been perfectly freed from the accumulated toxic effects of his stimulants, and the physical and mental craving for his poison has been perfectly eliminated. Unless these results are attained, delirium tremens and the other unfavorable conditions that may come simply out of deprivation, and be due to that alone, cannot be avoided. Many things which I said in the previous article in connection with this subject might prove of benefit if repeated. I hope every reader of THE MODERN HOSPITAL will read the previous article, if he has not already done so, and that will prepare him for what is coming now.

Arriving at a definite medical treatment for the alcoholic has been very interesting to me in this work. When I took up the work in 1901, it was for the treatment of drug habits exclusively. But early in the work I happened to have a male patient who had been drinking heavily, besides taking morphin. I found that when he had completed the medical treatment, he didn't crave either his morphin or his alcohol. Here was something new—and I followed it up to see if it were true. My next step was to secure a confirmed alcoholic and treat him. I found, after two or three days of definite medical treatment, that the man was perfectly freed from the effects of his alcohol. This was the beginning of my study of the alcoholic. It led me into the study of why the alcoholic developed delirium tremens, why permanent mental lesion was in most cases the result, and why permanent insanity was to be reckoned with in the end. Then I found, by use of the definite medical methods which I had evolved, that it made no difference how much alcoholic stimulant the patient may have been taking. Under the medical treatment which I shall presently outline, the patient would not develop delirium tremens, and there would be no alcoholic lesion with which to deal. This means that carrying out this work as I have been doing has eliminated the hazard of alcoholic insanity, and we all know that the chronic alcoholic has been the chief source of population of the asylums for the insane. So, then, the hazard of alcoholic insanity can positively be eliminated by carrying out my suggestions. And so far as the hazard of death is concerned, it should be interesting for the reader to know that for the first twelve years of this work, during which the number of alcoholics treated, from every angle and in every state of inebriety, had run into many thousands (being a *hospital*, we received this type of patient in any condition in which he might be brought to us), we did not have a single death.

I found in my early investigations in this matter that, in treating alcoholism, we had to deal with the narcotic effect of alcohol and not its stimulating effect. The definite treatment which we carried out is based on this medical formula:

	Gm. or c.c.
℞—Tincture belladonna.....	62.0 or fl℥ ij
Fluidextract xanthoxylum....	
Fluidextract hyoscyamus...aa	31.0 or fl℥ j

We administered the above mixture hourly by the mouth in capsule, beginning with a minimum dosage of 6 drops. The dose is increased or decreased according to individual tolerance, and, as the action of belladonna can be easily noted by the extremely dilated pupil, dryness of the throat, and flushing of the skin, with ordinary thought and care, in the short interval of administration, there is never any necessity for bringing about extreme physiological action of this drug—that is, delirium.

The physician who is not thoroughly familiar with the alcoholic would find it most difficult to differentiate between alcoholic delirium and belladonna delirium. He may distinguish between them by the fact that alcoholic delirium is always preceded by extreme tremor, while belladonna de-

lirium is not. It would be easy in a chronic alcoholic to have a combination of the two conditions to deal with, and it would be very difficult for the inexperienced physician to diagnose such a condition intelligently.

The length of time over which this belladonna mixture is continued depends entirely on the individual patient, but it is given continuously and unremittingly, day and night, until we get a complete and perfect bowel elimination. We find that when we have a certain characteristic of elimination—a dark, thick, green mucous stool—there is a complete and definite physical change established. When this is followed up by a dose of castor oil, we have only to resort to temporary stimulation of the patient with a moderate amount of strychnin or some similar stimulant, possibly the giving of a stomachic of rhubarb, sodium, and capsicum, the careful supervision of diet for a few days, and within the period of a week, unless the case is one of old chronic standing and horribly depleted physically, we realize a definite medical result. The patient is unpoisoned and is physiologically free of his former craving.

Immediately on the admission of an alcoholic to the hospital, we first ascertain whether we have a case of chronic alcoholism. If we have, we immediately put the patient to sleep, for we have found that no patient can sleep and have delirium tremens. It makes no difference how long a period he may have been drunk, we do not deprive him immediately of the alcoholic stimulant he has been taking. We alternate with his alcohol a sedative, which is composed of

℞—Alcohol ..... 8 percent

Each fluidounce represents

	Gm. or c.c.	
Chloral hydrate.....	1.5	or gr. xxiiss
Tincture hyoscyamus.....	3.0	or ♏ xlv
Tincture ginger	1.0	or ♏ xv
Tincture capsicum	0.25	or ♏ iii¾
Water..sufficient to make	31.0	or fl℥ j

We repeat this sedative at reasonable intervals until we are able to produce sleep, avoiding, of course, the bringing about of any unfavorable condition; but this we are not very likely to get, giving the treatment as advised. We use catharsis very freely in our treatment here. We employ the compound cathartic pill, U. S. P. standard, with blue mass; and we give from 2 to 5 pills, with 5 to 10 grains of blue mass, at intervals of from fifteen to twenty hours the first two or three days, as may be indicated in our study of the case. In giving the belladonna mixture, you may be sure that you will neither produce any unfavorable intestinal irritation nor get any cumulative action of the belladonna. No patient who comes to us full of alcohol need experience any of the results growing out of arbitrary deprivation.

There is a considerable amount of important detail in the administration of the treatment, to give which in full here would take up rather more space than I feel should be asked of the editor. I very strongly urge those who wish to take up this treatment to let me hear from them, and I shall be more than glad to take up the whole matter with them in the most explicit way.

After-treatment is all-important with these cases, but I can only touch on it here and then go on. Most of these patients profit by hard physical exercise under the direction of physical trainers who make a business of such exercise; but they should never be colonized in sanatoriums, either after or before treatment. We have found that a week or two of the proper application of hydrotherapy, electricity, and massage and electricity puts the patient in the best possible condition to be dealt with. Get him "into shape" physically, and you will then be able to get a definite line on both the physical and mental man. We have realized this so keenly in our work here that I have lately established a physiologic department which is as complete as expert medical advice and modern mechanical and electrical invention can make it. We see the good effects of it already in the improved condition in which patients leave the hospital after taking a thorough course of physiologic therapeutics.

Now, in the city hospitals with which I am familiar no alcoholic stimulant is administered to the alcoholic patient; and, if there were, thousands of persons unable to get a drink by other means would enter the hospital, knowing that alcohol would be administered. The hospitals now simply let the patient take the medical consequences rather than administer alcoholic stimulant.

Great care must be observed in treating chronic alcoholics, for we have found that, even after definite medical treatment has been inaugurated, delirium tremens may develop unless the patient is closely guarded and sufficiently stimulated, and unless proper sleep has been brought about by the use of hypnotics. It will interest the reader to know that, in my observation of this type of patient, delirium tremens develops in the afternoon and evening—never in the morning. If you are familiar with the tremor preceding delirium tremens and will resort to the use of the sedative and alcohol alternately, you are bound to prevent such a development.

But the city hospital physician and the prac-

ticing physician who treats this type of patient in private practice have each an entirely different problem to handle in his treatment of delirium tremens. I realize the hazard of even suggesting medication under the circumstances, for I know that, with few exceptions, although the wards of the city hospitals are under the charge of some one physician regularly, there is a constant change of visiting physicians, and consequently there is established no standard medical treatment; nor can there be any. The visiting physician, in most instances, has his own idea about treating such cases, and under most present conditions his idea is an extremely unfavorable one. All hospitals of any importance would profit by having some salaried resident physician who could devote his entire time and attention to the alcoholic ward. Dealing with delirium tremens requires care and constant supervision. No physician treating these cases can, under any circumstances, afford to give any "S O S" order. No man objects to the use of physical restraint in a case of delirium tremens more than I, and in my opinion it shows medical ignorance and cowardice when it is done. Unless there is some serious heart condition present, or unless pneumonia develops in connection with such cases, medical measures should invariably be resorted to; and you cannot make any progress in helping such a patient until you have produced sleep.

After delirium tremens has developed, the usual giving of hypnotics becomes dangerous at once; for if, under the circumstances, you get cumulative action of such hypnotics, then your patient dies from depression. Where the physical condition is favorable, you will find that a moderate amount of hypnotics and a combination of 1-10 grain of apomorphin, 1-30 of strychnin, and 1-150 of hyoscin, hypodermically, will immediately bring about a reaction. Then, with care in the employment of stimulants and sedatives—and maybe this hypodermic will have to be repeated in thirty minutes to an hour—you are bound to bring about sleep. And remember, sleep the patient must have. Bear that in mind always.

Extreme care should be taken to see that the patient is functionating properly, both by the bowels and the kidneys. See that he gets light food, to be eaten just as hot as the patient can eat it. As soon as he is able to begin definite medical treatment, take this up. If necessary, begin the treatment at night, and see positively that the patient sleeps. If, when you have completed your medical treatment, the patient has developed any hallucination at all, you must then resort to the use of ergot, giving the compound tincture in the usual dosage. You will find that it will be only a few days before the condition clears up perfectly. I have never had a case come to me—whether a chronic alcoholic, whether brought in with delirium tremens, or after passing through delirium tremens, or whether the case was one of wet brain following delirium tremens—that did not, after definite medical treatment, followed by ergot for a few days, without a single exception, clear up perfectly.

I have had a number of medical men in my employ—some who have served as long as fifteen years in state insane hospitals. These men, until they became thoroughly accustomed to the results we have been able to get here in these cases, would insist that a case of wet brain meant an insane patient, that he should be committed to some institution and that he was ineligible for medical treatment.

So my experiences in dealing with this alcoholic problem cover a broad field and they plough deep; and they enable me to make some very broad, positive statements as to what to do for the alcoholic and as to the definite results that can be obtained for him in medical treatment by the plan I have developed in my hospital work.

Now, the sociological side of this alcoholic problem is just as important as the medical side; yet it might be unwise to take up this phase of the work in this article. But, in view of the importance of this phase of the alcoholic problem, I am sure THE MODERN HOSPITAL would be glad to have a further article as to the after-treatment and care of the alcoholic, taking up the physical and the mental hazard in leaving him high and dry, and the sociological enormity of not disposing of him in some definite way.

I hope to see the time when each one of our big hospitals will have an alcoholic clearing house—not an alcoholic boarding house. When this work is taken up in this positive, definite way, the authorities are going to dispose finally of the alcoholic in one way or another. They should help the man worth while. They should do something definite for him. A sociological department should see that such a man either gets back his old job after his treatment is completed, or that some other employment is provided for him. If the man is physically able to work and won't work, he should be made to work by the state and municipal authorities. But those patients with underlying physical disabilities should have other treatment and care, as may be indicated. No definite medical treatment or care can be carried out and proper medical results had under any other conditions.

There are more fatalities in alcoholic wards from alcoholic delirium in pneumonia than from pneumonia itself. Unless physicians have a thorough and perfect knowledge of dealing with the alcoholic, ninety-nine chronic alcoholic patients who develop pneumonia will die of delirium tremens if they do not die of pneumonia. To organize this work as it should be organized would lessen the usual number of such cases in these institutions about 75 percent.

The amount of space now devoted to the housing of the patients and the immense amount of time and care involved in caring for them—yet not helping them—would be more than sufficient to carry out the work in a definite way and get some results worth while. For the first time in hospital history, progress would be made in dealing with this type of sick man. The state and municipal authorities must assume responsibility in dealing with this problem, and it is for the superintendents of institutions that have to do with this type of patient to outline to their directing boards where their responsibility begins and ends.

To sum up, the situation as far as we have gone means this—that no alcoholic has a fair chance when he is simply sobered up. Unless something medically definite is done for the chronic alcoholic, his end is either the madhouse or the morgue. Employment should be provided for the man who wants to work, but remember here that no man is going to work unless he profits by his work. We cannot expect much from this type of sick man unless something intelligently definite is done to put him squarely on his feet. At the present time alcoholism is treated as a disgrace. The alcoholic is humiliated, punished, and still further degraded, and society is doing everything it possibly can to destroy him utterly. This is all wrong.

To those who may read this article and would then like further information as to the handling of this type of patient, I may say that it will give me great pleasure to answer their inquiries freely and to advise and assist them in any way I can to solve this serious problem for the benefit of those concerned.

ST. JOSEPH'S HOSPITAL, KANSAS CITY, MO.

New Block Type Institution in Italian Style, With All Modern Conveniences, Takes Place of Older Hospital—Some of the Details of Construction

By J. D. GRIFFITH, M. D., Chief of Staff

THE contract for St. Joseph's Hospital, to be built for the Sisters of St. Joseph, was let August 24, the ground broken September 1, and the corner stone laid December 19, 1915. The new hospital is now being erected on that high tract of land so familiar to most Kansas Cityans, bounded by Prospect avenue, Linwood Boulevard, Wabash avenue, and Thirty-first street, which property was purchased by the Sisters of St. Joseph on October 7, 1909. The selection of that site in a fashionable, centrally located neighborhood pays high tribute to the foresight of the sisters, who have shown every evidence of being awake to Kansas City's needs. This new location, on one of the city's finest boulevards, besides being away from the noise and dirt of the downtown district, will be located more centrally with reference to the homes of the patients, and will be in closer proximity to the homes of the many physicians who attend the patients.

The two buildings provided for and now in the course of construction are the hospital proper and the power plant. The hospital building is of the Italian style of architecture, with a strict adherence to the architectural details of the Italian renaissance. The outside walls are of dark-red tapestry bricks, having mat surfaces, with terra cotta columns, cornice, and trimming. The terra cotta is smooth surfaced, of a light-colored warm buff, having a slight pink tinge. Much attention has been given to the details of the terra cotta, models having been made for and approved by the architects before a single piece was placed in the kilns.

A spacious front entrance porch, with broad, easy steps, is provided for, to be located at the center and to face Linwood Boulevard. The porch, together with the landings, steps, etc., are of Phenix cut stone, and the two landings each contain a large panel of "Heatherbrown" tile.

The hospital building is made up of a central section (133 by 48 feet) running east and west, with four wings, each 83 feet long by 36 feet wide, one pointing to the northeast, another to the southeast, another to the southwest, and another to the northwest. These five sections will present a ground plan similar to a huge letter "X."

There is an 8-foot-6-inch basement story, an 11-foot-6-inch ground story, a 13-foot-6-inch first story, a 12-foot-6-inch second story, twelve-foot third, fourth, and fifth stories, an 11-foot-10-inch sixth story, and an attic story 8 feet in height.

The finished building will be seven stories above the ground, and will rise 96 feet above the ground floor line. The building is given the shape of a letter "X," so that the two wings at the northeast and southeast corners will have their corridors radiating from a single point, where will be located a single booth in plain view of every patient's door in that half of that particular story. A similar booth will take care of the west half of the same story, and this same scheme is carried out on each of the upper six stories, making twelve booths in all. The peculiar shape of the building will also tend to give an equal distribution of light and ventilation in all the rooms, each room being an outside room.

Ample corridors run through the center of the central section of the building and also the full length of the wings. At the outer end of each wing, and for each story above the ground floor, will be a sun porch, 14 by 35½ feet. These will in a very convenient manner provide fresh air and sunlight for convalescing patients. On the ground floor and at the extreme end of the northwest wing will be an extension 30 by 35 feet, to be used as part of the main kitchen.

St. Joseph's Hospital. South elevation.

On the ground floor will be located the lecture and assembly room, with its stage, the sisters' dining room, main kitchen, men help's dining room, waiting rooms, office, drug store, chapel, morgue, clinic examination rooms, domestic science room, linen room, record storage room, vapor room, electrotherapy room, hydrotherapy room, men's lounging and smoking room (36 by 32 feet), and other rooms of lesser importance. The first story will contain the undergraduate nurses' dining room, bandage room, men's dining room, doctors' room, a number of reception rooms, a temporary chapel (46 by 36 feet), and a number of patients' rooms with private baths. On the ground floor is the sisters' community room, bandage room, and patients' rooms with private baths. The third, fourth, and fifth stories each have a bandage room and many rooms for patients. On the sixth floor is located a large operating room, with a spacious amphitheater, three other operation rooms, an x-ray room, etherizing room, bandage room, delivery room for maternity cases, emergency room, electrotherapeutic room, plaster room, patients' rooms, and others of lesser importance. There are diet kitchens, fever rooms, storage rooms, linen rooms, baths, toilets, etc., distributed throughout the building.

The power plant (81 by 42 feet), which is to be two stories in height, will contain a fully equipped modern steam laundry, an electric lighting plant, steam heating plant, and a refrigeration system which, besides supplying the hospital with ice for all uses, will supply refrigeration for the various refrigerators, fever rooms, morgue, etc. The new building provides space for 250 beds, whereas the present hospital at Seventh and Penn streets has room for only 95 beds.

The architects apparently have left no stone unturned in their search for modern conveniences and all that goes to make a thoroughly up-to-date hospital according to the latest developments in hospital practice. First of all, an all-fireproof building was necessary, with an isolated power house, which removes the principal source of fire from the building. The isolated power house also means that the gases, noise, and vibrations usually found in such plants will be far removed from the hospital building. The two buildings are to be connected by a pipe tunnel. Other features are operating rooms lined with glass; bandage rooms on each floor, where sterilized water, bandages, etc., are accessible for simple cases not requiring the use of an operating room; a maternity section, which is entirely separated from the rest

of the floor by division walls, having rooms for the care of babies, where the temperature is under perfect control; a plaster room, where all plaster casts are applied; and a lead-lined x-ray room, where the operator is inclosed in a lead booth and looks through a window made of a composition of glass and lead. Another feature, and perhaps one of the best, is the fact that there are three separate stairways, each separated from the rest of the building by steel and wire-glass partitions and doors. These are in addition to the two outside fire escapes.

There are to be two passenger elevators, and provision is made for a future push-button elevator for the exclusive use of the sisters and nurses. The direct heating system is to be applied through steam radiators, and there is to be an exhaust system of ventilation. Every window is to have a sash ventilator, weather strips, screens, etc. The central wing corridor on the first floor is to have a marble floor, all other corridors are to have composition cork tile floors to deaden the sound of walking, and there will be marble bases and plinths. All toilet and bath rooms are to have tile flooring and wainscot.

There are to be four fever rooms, cooled by refrigeration, and to be insulated with cork insulation in floors, walls, and ceilings, and provision is made for more fever rooms as they are needed. The building is to be equipped throughout with a pneumatic cleaning system, and all exposed plumbing, faucets, etc., are to be "red metal," a new composition which has recently come into use for the better class of plumbing.

There will be a telephone in each patient's room, and the patient will press a button to get the connection with the attendant in the signal booth, who can pass on the advisability of a telephone conversation. The attendant in the booth may then make the connection to the house switchboard. A patient can signal to the attendant in the booth by pushing a button, which also lights a red light just outside of the patient's door, and which may be seen by a nurse passing through the corridor. The rooms will also be equipped with electric plugs for extra lighting, electric heaters, etc. The signal booths are both ornamental and roomy, and are used for various other purposes, such as the keeping of records, doctors' calls, etc. The sisters now have under consideration a doctors' paging system, which calls the doctors in a soft, audible voice.

The present plans call for only the two buildings mentioned above, but at some future date it is planned to build a head house for the sisters' home, to be located a short distance north of the center of the hospital building, and to have these two buildings connected by a colonnade. At a point on the west side of the premises and directly opposite the power house is to be a nurses' home at some future date, when the nurses' home and the power house will be connected with the head house by means of colonnades. At some future time it is planned to build a chapel immediately north of the head house.

St. Joseph's Hospital was first opened October 15, 1874, being the first hospital in Kansas City, or this part of Missouri, and one of the first few in the Middle West. At the beginning it was conducted in a comparatively small building, which had been a residence on the site of the present hospital at Seventh and Penn streets. The residence had six large rooms, two or three small rooms, a large bath room, and an isolated kitchen. When the residence was converted into a hospital, the reception room and the parlor, having folding doors between, were used as the wards, and the two or three small rooms at the back of the first story were used as living rooms for the sisters. The chapel was located at the back, on the second floor, over the sisters' quarters, and the bath room was used as an operating room. New buildings and additions were built at later dates. Sister Romana, who has been connected with this institution for eighteen years, is now the mother superior.

County Hospitals of California Condemned

The county hospitals of California were emphatically and sweepingly condemned at the hearing of the State Social Insurance Commission in November. Rabbi Martin A. Meyer, for six years a member of the California State Board of Charities and Correction, said that the average patient in a California county institution receives poor housing, poor nursing, poor treatment, and coarse food; $3,000,000 yearly are spent—and spent badly—on such institutions. The "constructive policy" of such institution, Dr. Meyer is quoted as saying, "usually consists of the patient being hustled out as fast as possible, unless he should happen to be a voter and the head of the institution considers it desirable to hold him a little longer. There are one or two institutions, however, that hold the patients interminably on account of a system by which the superintendent is paid so much board by each patient." As far as cure is concerned, "county hospitals are satisfied if they don't kill a man; if the patient is hustled out alive, they are doing very well."

Progress has been made by the Nurses' Alumni Association of the Battle Creek Sanitarium and Hospital in its effort to establish a sick benefit fund, the immediate goal being $1,000. Recently a bazar for the sale of Christmas articles was held, and about $250 was realized, making a total of about $700. There has been a delay in reaching this figure because some money has already been spent in worthy cases of sickness and misfortune. So that current expenses may be met out of ordinary revenue, the annual dues were recently increased from $1 a year to $2, with the proviso that new members should pay the smaller sum for the first year.

SOME FACTS AND FALLACIES OF STERILIZATION

No Mystery About the Principles Involved in Killing Bacteria—Plain Laws of Physics Rule—What Pasteur Discovered—Dry Heat Versus Boiling Water—Steam—The Vacuum—The Steam Jacket

By A. WAYNE CLARK, Bacteriologist, Johnson & Johnson, New Brunswick, N. J.

THERE seem to be many hazy ideas and a good deal of misunderstanding about steam sterilization current among the hospitals, and there appears to be a sort of amusing competition among some of them as to which kills the germs the "deadest." The nurses go around from one hospital to another and carry the operating room gossip. Some one told the writer once that they were great on sterilization at the Blank Hospital and always sterilized for two hours. Now, as it actually takes about one minute to kill the hardiest germs at 250° F. or 15 pounds steam, it seems an unnecessary margin of safety to allow 119 minutes more. That kind of competition sounds about as reasonable as to claim that you can kill a cat more completely with a 16-inch shell than with a rifle bullet.

Also, there is a good deal of talk being passed around about fractional sterilization, and the words "dry sterilization" are used sometimes. Now, let us discuss this sterilization business and go right back to first principles.

The workers in bacteriology previous to Pasteur sometimes produced sterility of culture fluids when they boiled them, and at other times failed to do so. It took the master mind of Pasteur some time to unravel this mystery. The reason was that some species of bacteria under certain conditions contain spores, whereas others do not. Spores are a peculiar nucleus or seed form of some bacilli, and, when they assume this spore condition, they are very hard to kill; in fact, a few of the harmless air germs form spores that are not killed by boiling in water for a minute or two—that is the whole trouble. Hence Pasteur found that boiling did sterilize about half of the time because half of the time none of these hardy air germs happened to be present in the spore condition. The bacteriologists following Pasteur found that the way to kill all germs in a culture fluid was to bring it to a boil the day it was made, which killed everything but a few hardy spores. Then let the fluid stand in a warm place until the next day, during which time these spores will change into the vegetative or ordinary stage of bacterial existence, and then by bringing again to a boil you can kill them. This is generally done once more on the third day, so as to kill any that might not have developed during the first twenty-four hours. That is the real science of fractional sterilization as opposed to

THE FALLACY OF FRACTIONAL STERILIZATION

as practiced by some hospitals, discussed by many surgeons, and argued about generally by hospital people. Those who have read the above ought to be able to understand that there is no such thing as fractional sterilization of a dry material like gauze or catgut, because the spores cannot develop in anything but a culture fluid. Fractional sterilization is a big phrase and sounds well, but it has no business outside of a bacteriological laboratory. Repeated high-temperature heating is not fractional sterilization, and, moreover, the former itself is a fallacy. The only excuse the writer ever heard for repeated high-temperature heating was that the germs could be killed by repeated blows applied a day apart. This was said in sober earnestness, but it seemed to the writer like a joke, and he felt like saying, and with good reason, that if we are to be compelled to compare killing germs to a prize fight, then why can't you do it better by keeping right on hammering the germs while you have them down instead of waiting twenty-four hours between blows for them to recover?

There are three ways of sterilizing by heat, and all are available for some purposes for surgery. They are:

1. Dry Heat Sterilization.—By this is meant sterilization by dry air, using no water or steam. This is useful when no steam outfit of any kind is obtainable, as ovens at homes in maternity or accident cases. It is necessary to expose the materials to a temperature of 330° to 350° F. for half an hour at least, as dry air does not penetrate well; so, if even a small package of dressings were heated to 350° F., it would not be likely to get much above 330 inside in half an hour. This method is not commended for the reason given, and almost any kind of steam boiler is better—for example, a wash boiler; also, a sufficiently high temperature in dry air to secure sterility practically always scorches or ruins cotton goods.

2. Sterilization by Boiling in Water.—This is the general method today in hospitals for the sterilization of metal instruments, glass ligature tubes, other glass instruments, etc., and by some

for rubber gloves. It is *the* real, good, sure, safe method of sterilizing, with no frills or fuss, no vacuums or patent valves about it. If everything were boiled in water for every surgical operation, there would be a great deal less trouble. Twenty minutes of real boiling is enough. If you feel like playing extra safe, add ten minutes more; not necessary, but, if it makes you feel better, do it.

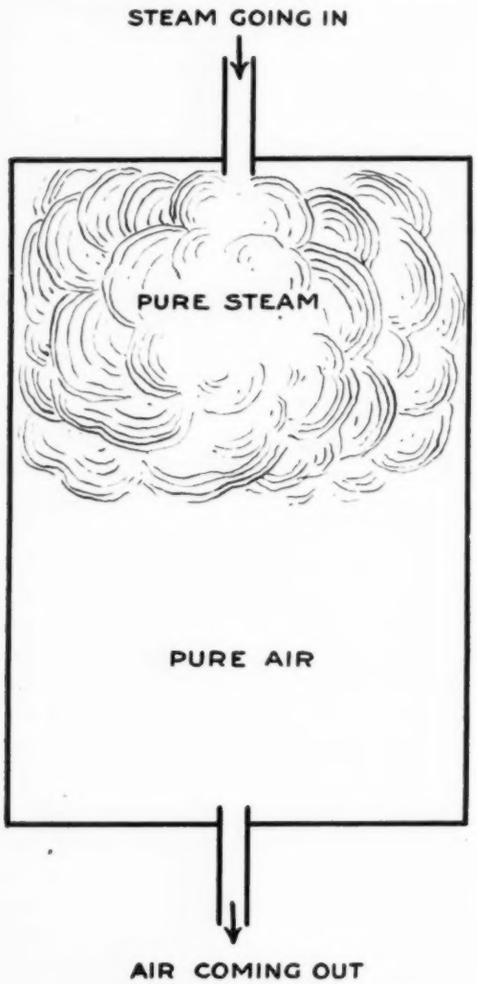

Fig. 1. The right way. Illustrating the correct method of applying steam to a sterilizer in order to drive out the air. Steam entering at the top and air going out at the bottom results in a quick and certain filling of the sterilizer with steam. Steam is lighter than air, and, if it is run in on top of air, will push it out at the bottom opening without mixing with it.

As a matter of fact, fifteen minutes is probably sufficient, and ten is just about on the division line. So, we call it twenty minutes generally, and no one will ever be hurt by anything in a surgical operation that has been boiled twenty minutes.

3. STEAM STERILIZATION.—The open steam sterilizer has very generally been supplanted by the closed pressure sterilizer, and the writer is not so sure that much has been gained thereby. The one great trouble about all kinds of closed sterilizers is that the operators do not understand that they must be sure to blow all the air out of them. Personally, the writer would much rather put his trust in dressings sterilized by one hour of steaming in an ash can or a clothes boiler, with some water in the bottom and placed on the fire, than in the product of some of the fancy, double-jacketed, vacuum pressure machines, simply because operators do not make certain that the air is all out of them. The pressure apparatus has its uses, and has many advantages if properly used, but it is a

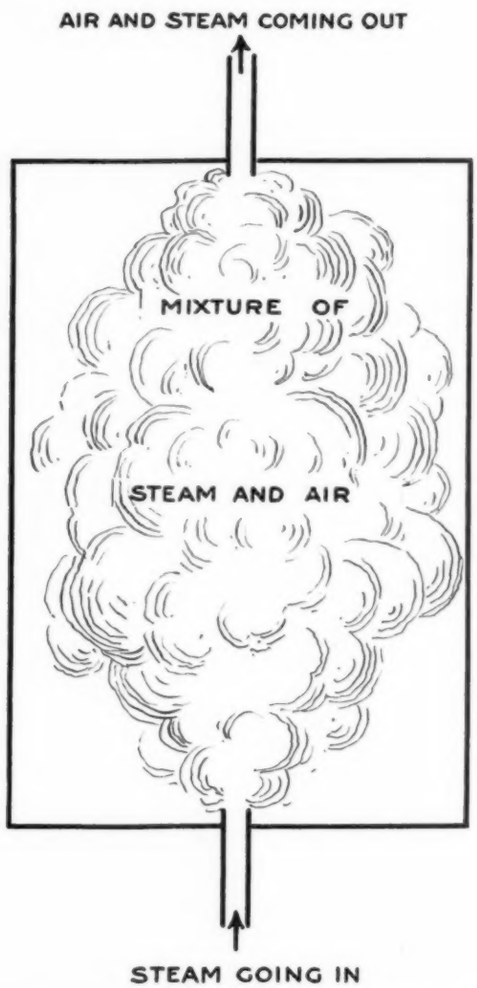

Fig. 2. The wrong way. Illustrating the wrong way to remove air from a steam sterilizer. Steam entering at the bottom will, because it is lighter than air, immediately rise through the air, mix with it, and air and steam will go out at the opening in the top. The result is that this mixture has to be displaced by progressive dilution, which requires a long time, and a great deal of steam is wasted.

delusion and a snare unless you know exactly what you are doing.

You operators of sterilizers, take a look at the apparatus you are using, and figure out for yourselves whether you are sure that you are giving your dressings pure steam at 250° F. Many of you, the writer feels sure, are not doing so, but are getting a mixture of steam and air; or, in other words, are trying to sterilize by air pressure —not steam pressure. You are not sterilizing at all.

A properly arranged sterilizer has the steam in-

let at the top and the air outlet at the bottom, because that is the quick, sure, and easy way to remove the air. Steam is lighter than air, floats on air, and will push it down through a sterilizer just like a plunger, and will not mix with it, provided the steam is admitted on top of the air. Fig. 1 shows the right way, Fig. 2 the wrong way, and Fig. 3 shows the jacketed sterilizer properly piped. Plumbers practically always do it the wrong way, and there seem to be some makers of hospital sterilizers that also try to run counter to the laws of physics. Doing it the other way is not fatal, but simply necessitates a thorough understanding of the law of nature that you must keep on blowing off air and steam until all the air is

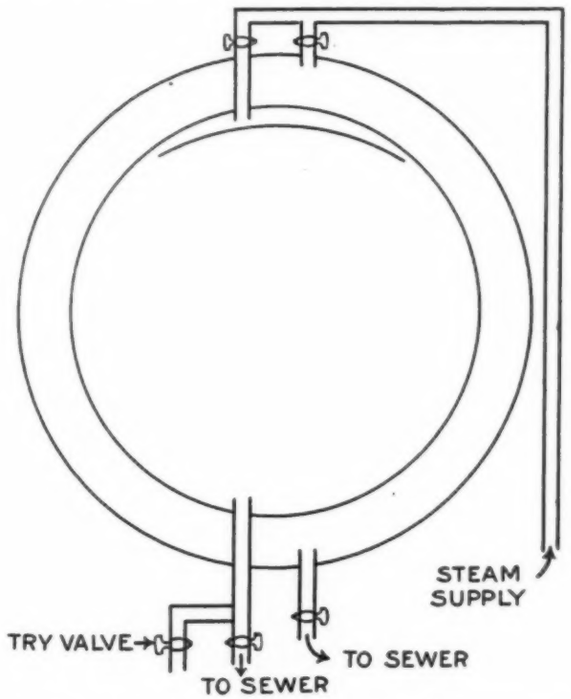

Fig. 3. The right way for piping for a jacketed steam-pressure sterilizer.

out of the apparatus. That may take a half hour or one and a half hours, depending on the steam supply and the size of the sterilizer. To determine about this, there must be a blow-off pipe opening into the room, so you can test it. Unless you are an expert engineer, you cannot tell when the air is all out by looking at the steam streaming out of a pipe. The way to tell is to stick the end of the outlet pipe under water in a basin or pail. If you are getting air mixed with the steam, you will see bubbles rising; if all the air is out, you will see no bubbles, but will hear only the hammering noise of condensing steam. After you have tried this out a few times and found how long it takes to drive all the air out of your sterilizer, you can then add a safe margin for variation and in future runs simply blow off for that length of time. You must do this experimenting anyway, whether your sterilizer is fed from the top or bottom. When it is properly arranged, however, there is a sharp line of division between pure air and pure steam, and this is not the case when the apparatus is constructed in any other way. You will save a great deal of steam and time by having the machine properly arranged.

THE USE OF VACUUM

This subject has purposely been avoided in this discussion up to this point because it introduces a problem not directly entering into the principles involved in sterilization by steam. The production of a partial vacuum previous to turning in the steam into a sterilizer chamber has many obvious advantages where the materials to be sterilized are in tight boxes or wrapped in comparatively air-tight coverings, or more particularly in glass jars or tubes. It is difficult for steam to displace or crowd out air in such containers, so that, if part of the air is taken out first, the theory is that the steam will rush in and fill up the space. This it probably will do, but the writer considers it bad practice to depend too much on it, and it is positively very bad practice to imagine that because you have used a vacuum device you have removed all the air, for you certainly have not. The best steam ejector vacuum devices reduce the atmospheric pressure only 15 to 18 inches, measured on the mercury barometer (most gauges are graduated to correspond to the mercury barometer), out of a possible 28 to 30 inches; in other words, the air is not nearly all out. So, just because you have used a valve on the sterilizer marked "vacuum," do not imagine that you need not blow out the rest of the air after you turn on the steam. With such bundles of dressings wrapped in muslin as are commonly used in hospitals, there is not much advantage in using a vacuum at all, as steam will penetrate well through such packages. It is necessary in any case to allow enough time for penetration through the largest and tightest package in the sterilizer. A registering thermometer, with its bulb buried in such a package, will indicate the degree of penetration. In spite of that remark in the first part of this paper about long-time sterilizing, it is better to allow enough time, not because it takes a long time to kill the bacteria, but because of this question of penetration, the chief trouble about which is displacement of air.

The small sterilizer, using a gas machine for making steam and capable of producing a vacuum of only 6 or 7 inches, is hardly worth considering as a vacuum producer. The vacuum device had better be ignored and the air blown out directly

by steam. On the contrary, where 50 or 60 pounds steam pressure, or preferably even more, is available and a good ejector giving 12 to 15 inches is attached, some good results may be expected.

STEAM JACKETS

It is very questionable whether the demand for *dry* steam sterilized things does not often result in having the things not sterile. The especially destructive action of steam on bacteria is due to the fact that it does wet them. Dry heat or a mixture of steam and air at the temperature used for steam sterilization will not kill. Nevertheless, a steam jacket does prevent excessive condensation, and dressings steamed in a jacketed apparatus should not be soaking wet, which is the purpose of a jacketed or double sterilizer.

In conclusion, the writer strongly suggests that bacteriological culture tests be made from time to time. Those hospitals which have no bacteriological laboratory can easily mail a small package of gauze sponges to an outside laboratory for test. Have at least a half dozen tests made, and the best way to do this is to take some short pieces of cotton tape—say, about an inch or an inch and a half long—and make sure that they are infected with hardy organisms by wiping them on a dusty shelf or on the floor. Fold up a half dozen of these pieces of tape in a pad of gauze, marked in some way to distinguish it, and then pack the pad in the middle of an ordinary package of dressings, put it through your regular process and send the whole package to the laboratory. The bacteriologist can handle small tapes with more certainty and greater ease than he can handle the comparatively large pads, and besides this, if they are treated as described above, you will know that they will be infected to start with.

UNITED STATES NAVAL HOSPITAL ON THE ISLAND OF GUAM

Isolated Wards of Uncle Sam Are Subject to Many Diseases, But Efficient Naval Supervision and Hospital Treatment Are Improving the New Generation

By L. W. JOHNSON, D. D. S., M. D., Passed Assistant Surgeon United States Navy

THE average citizen of the United States is as well informed concerning Guam as he was about the Gallipoli Peninsula before the European War, so a brief preliminary description of the community served by the United States Naval Hospital, Guam, will be of interest.

Guam was ceded to the United States at the close of the Spanish-American War. It is administered by the Navy Department, and has a naval officer for governor. Communication with San Francisco, 5,500 miles east, and Manila, 1,700 miles west, is by army transport, which stops once a month, with passengers, mail, and stores. The island is in the tropical zone, 13 degrees north of the equator, is 30 miles long, and averages 6 miles in width.

The climate is equable and healthful, the average temperature being 81° F., and there is never any such excessive heat as is experienced in any of the large cities of the United States in the summer time. From December to June the northeast trade winds blow, and there is little rain; from June to December the monsoon blows, and this is the rainy season. The effect of these changes is shown in the marked periodicity of certain diseases. Severe typhoons occasionally visit the island, and earthquakes occur about once a week, though seldom severe enough to cause serious damage. The possibility of disastrous typhoons and earthquakes is an important consideration in determining the type of construction suitable for a hospital building.

Natives of Guam are called Chamorros, and number about 13,000. For 300 years they were under Spanish domination, and Spanish ideas and customs are still the predominating influence in their daily life. They are an agricultural people, and nearly every family has a house in one of the towns as well as a ranch in the country. It is customary to sleep in town and go to the ranch to work during the day, even though the going and coming consume half of the working day. A few days of work on the ranch each month is sufficient to produce enough food to support a family, and it is difficult to make them understand the purpose of producing more than enough for immediate needs, since money means little to them. For these reasons it is not easy to find fresh food for sale, or to introduce more efficient methods of farming which would lessen labor or increase crops. Most of the food consumed by Americans is cold storage or canned food brought from the United States. Thus the commissary department presents some of the most difficult problems with which the hospital has to deal.

The lower classes of the natives seldom bathe or wash, and they eat with their hands from a common dish; they defecate promiscuously on their ranches, and a popular dressing for fresh wounds is the manure of the carabao. They fear

the evil spirits, which are abroad at night, and close the houses as tightly as possible to keep them out. Were these habits corrected, there would be little for the native wards of the hospital to do, for the greater part of the sickness among the natives can be traced to the conditions under which they live.

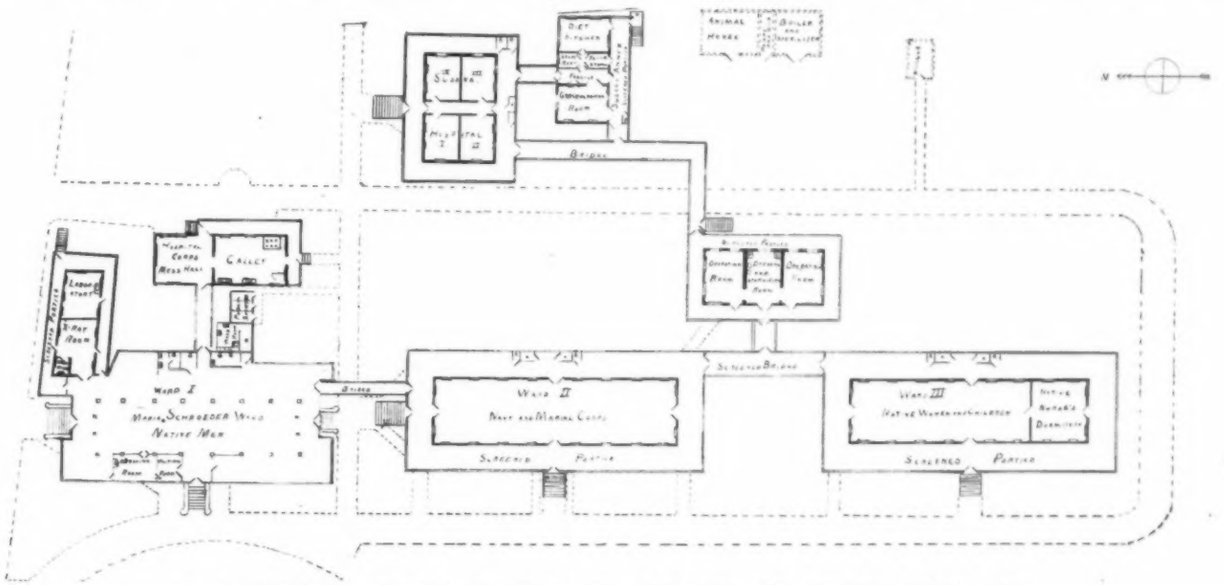

Fig. 1. United States Naval Hospital, Guam. General plot plan. The dotted lines indicate roads.

American occupation of Guam dates from 1898, when Captain Henry Glass, U. S. N., brought the United States ship Charleston into the harbor and opened fire on the ancient fort, which was the sole defense of the place. It is related that the Spanish governor, believing that the Charleston was honoring him by a national salute, went in person to the ship and apologized for his discourtesy in not returning the salute, which he was unable to do because he had no powder. He then learned for the first time that his country was at war with the United States.

Fig. 2. Guam Naval Hospital. Looking south toward the operating pavilion. Susana Hospital at left side.

Sanitary conditions on the island were then very bad, there were many in the advanced stages of leprosy and gangosa, and infection with intestinal parasites was universal and untreated. Since that time efforts to improve sanitation have been continuous, and there has been a great change for the better. Waterworks have been built, and every effort made to provide a year-round supply of water; latrines and baths have been built for public use and the natives instructed in their use; quarantine regulations to prevent the introduction of epidemic disease have been enforced; clinics and dressing stations have been established in the principal towns; gangosa and leprosy have been nearly eliminated, and the active campaign against intestinal parasites has changed the physical aspect of the whole younger generation. An excellent foundation has been laid for future educational and corrective measures, which should still further reduce certain of the more prevalent diseases.

Fig. 3. South end of ward 3. Quarters for native nurses behind screen.

In 1899 sick quarters for the naval personnel and a clinic for native out-patients were established. In 1901 a movement was started to pro-

vide a hospital for natives; land and money were secured, largely by the personal efforts of Mrs. Schroeder, wife of Rear Admiral Seaton Schroeder, who was the governor of Guam at that time. A building was erected, known as the Maria Schroeder Hospital. In 1905 the Susana Hospital Association was founded for the purpose of erecting a hospital for women and children; the largest donation, $10,000, was given by Mrs. Russell Sage. The association was named for the wife of Captain G. L. Dyer, U. S. N., who had been very active in its organization. A plot of land and a building adjacent to the Maria Schroeder Hospital were purchased, and a 4-bed ward and out-patient clinic for women and children established. The staff of each of these hospitals was composed of medical officers of the navy who were stationed in Guam.

In December, 1909, the Susana Hospital was seriously damaged and the Maria Schroeder Hospital somewhat damaged by a severe earthquake,

Fig. 4. A main street in Agana, the capital of Guam. Corn drying on mats in the street.

and sufficient funds for their reconstruction could not be obtained. An arrangement was made with the Navy Department by which the lands and buildings were transferred to the Federal Government and a naval hospital established. The damaged buildings have since been rebuilt, the Maria Schroeder Hospital as a part of and the Susana Hospital closely affiliated with the Naval Hospital. Two more wards and an operating pavilion have been erected, and an addition to the Susana Hospital is now under construction.

The hospital ward buildings are of uniform construction, reinforced concrete for the first floor, which is on the ground level, and wood for the second floor, which is used for hospital purposes. The floors are of native mahogany, which takes a beautiful polish. Each ward is surrounded by a 10-foot screened veranda, and the construction allows as much air circulation as possible; the verandas provide shade for the walks beneath and lessen the heat by protecting the concrete walls from the sun. The wards are connected by covered bridges, which are necessary during the rainy season. Corrugated galvanized iron, covered with tar paint, is used for all roofs.

Ward 1, or the Maria Schroeder Ward, is occupied by native male patients. The inner wall of this ward has been removed, except the uprights necessary for the support of the roof, and, for

Fig. 5. School children receiving hookworm treatment.

protection in case of typhoons, heavy canvas curtains have been rigged inside the wire screening. Since this change has been made, no typhoon has occurred to test the efficiency of these curtains. This ward has a dressing room equipped for minor and emergency surgery. On the ground floor under this ward are the carpenter and plumbing shops, paint locker, and lumber store room. At the northeast angle is a two-story extension, which contains the x-ray room and laboratory, with the native out-patient clinic on the ground level. To the east of the ward is a build-

Fig. 6. Residence of Dr. L. W. Johnson, of the navy, author of this article.

ing containing the galley and the mess hall for the members of the hospital corps, with the commissary store room below. In the space between this ward and the galley are a shower and wash room opening on the ward, and three public showers for the use of natives.

Ward 2 is used for sick enlisted men of the navy and marine corps, and is connected with

ward 1 by a covered bridge. Under this ward, on the ground level, are the dispensary, consulting room, nose and throat room, store rooms, and the Susana pharmacy. The pharmacy provides a place for filling prescriptions for those not entitled to free treatment, and a place where toilet articles, candy, cigars, and other articles can be purchased, something greatly appreciated in this remote

Fig. 7. Transportation in Guam. Carabao express, 2½ miles per hour.

place. Here is the only ice cream soda fountain in Guam, and the natives have taken more kindly to this than to any other innovation of the Americans, with the possible exception of baseball.

Ward 3 is for the care of native women and children. It is connected with ward 2 by a covered and screened bridge. This is the busiest ward in the hospital and the most desirable service, since medical officers of the navy have little opportunity for practice in obstetrics and pediatrics. A strict disciplinarian from a hos-

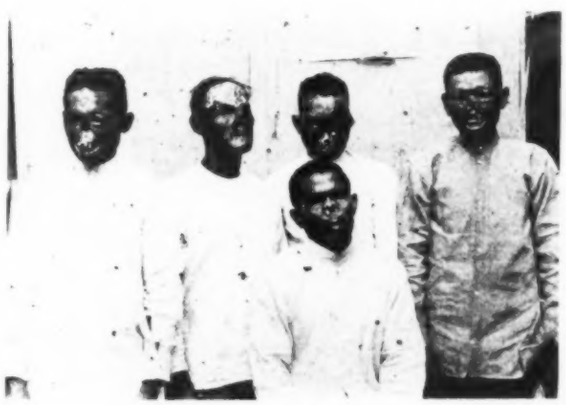

Fig. 8. Results of gangosa.

pital at home would be scandalized at the appearance of this ward at night; many of the patients then climb out of bed to sleep in real comfort on the floor; every baby has at least one member, sometimes many members, of the family asleep with it in its crib or on the floor under it; a dozen beds may accommodate thirty children of school age, some with night clothes and some without. Under this ward are the dental office, medical store room, and a lock ward for female venereal patients. All natives of Guam are entitled to free treatment in the hospital wards, and those desiring better accommodations or private rooms are cared for in Susana Hospital, where a small charge is made.

The operating pavilion is connected with the bridge between wards 2 and 3. The walls of this building are of reinforced concrete to the roof. On the second floor are two completely equipped operating rooms, with a dressing and sterilizer room between. On the ground floor of this building are the hospital offices.

Susana Hospital is connected with the other buildings by a long covered bridge. It has four private rooms, and there is sufficient space on the veranda to accommodate several patients. Under this building is the linen room. The annex shown

Fig. 9. Active gangosa. Before and after treatment. The scars are the result of yaws—not of gangosa.

on the plan to the south of Susana Hospital is now under construction, and will have a gynecological room and diet kitchen with store rooms below.

The administrative and professional duties are performed by medical officers of the navy, five being on duty here at present. They also act as health officers under the island government, performing such duties as school inspection, port quarantine, and sanitary inspection. A member of the navy dental corps is also stationed here. The nursing is done by a chief nurse and five nurses of the navy nurse corps, and in the male wards by members of the navy hospital corps. There are under training several native girls, who are carefully selected, and some of whom prove to be very intelligent and capable, though others can never comprehend the difference between ½ grain and 12 grains or between a temperature of 101°

and one of 110°. Those who become proficient and survive the two years of training and observation are given licenses as midwives, and do valuable work in that capacity among the natives, besides spreading the doctrine of cleanliness among the people and lessening their inherent distrust of the hospital. All the medical and nursing staff live in rented quarters outside the hospital grounds.

This hospital differs from other hospitals in that it has no bath tub. So far as I know, there are but three bath tubs in Guam. There is no running hot water in the hospital, or in any house that I know of in Guam, and there is electric light only from 6 p. m. to midnight. These seem great hardships to the newcomer, but, so far as results are concerned, they make little difference in the efficiency of the hospital, except for loss of time in an occasional emergency.

Guam offers unusual opportunity for the observation of certain tropical diseases. Gangosa is the most conspicuous of these, and a list prepared shortly after the American occupation showed 6 percent of the inhabitants to have the disease. There are three hypotheses as to its cause—that it is an attenuated form of syphilis, that it is a tertiary form of yaws, that it is a distinct disease in itself. It is difficult to mention gangosa without becoming involved in controversy, so no preference for any of these hypotheses will be expressed here. The disease has yielded so rapidly to treatment with salvarsan, mercury, and iodides that active cases are now rarely seen. A careful watch is kept on all old cases, and they are brought to the hospital occasionally for treatment of any open lesions that may develop. Many lepers were formerly found, but these have been removed to the leper colony at Culion, P. I., sporadic cases still occur. Amebic dysentery was once common, but has almost disappeared since completion of water supplies for the towns. Yaws is very prevalent, and it has been stated that 90 percent of natives have the disease in childhood; most adults bear yaws scars. The most extreme cases yield quickly to treatment by salvarsan, mercury, and iodides. Guha, or epidemic asthma, prevails at certain seasons; this takes the form of a fatal bronchopneumonia in infants, and in others it is quickly relieved by adrenalin. Intestinal parasites are almost universal among the natives, round, whip, and hookworms being most common. The eggs of these are found in the soil under the houses and beneath the finger nails of children. All natives entering the hospital are given worm treatment, and the school children are sent to the hospital in groups of about thirty for the treatment. It is usual for them to gain several pounds in weight and to make much more rapid progress in their studies after being freed from their worms. It is customary to examine the stools of Americans quarterly for eggs of these parasites. Tuberculosis is common in all its forms, and the people seem to have little resistance to it. They are afraid of the night air and the evil spirits which are abroad after dark, so they close their houses as tightly as possible and sleep in crowded rooms, packed together on the floors. The natives say that these evil spirits cannot harm anyone who does not believe in them, so the Americans can leave their houses open at night without fear. A special tuberculosis hospital has been built in an ideal location on a hill nearby, but sufficient funds have never been available for its maintenance as a hospital.

EARLY DISCOVERY OF CANCER

Yearly Medical Examination Urged for Prevention of Disease—Propaganda to Be Started Everywhere

The American Society for the Control of Cancer is strongly seconding the efforts of the National Association for the Study and Prevention of Tuberculosis to have December 6 set apart as "National Medical Examination Day." Among other observances planned for the day at Minneapolis will be an address on cancer by Dr. Harvey R. Gaylord, of Buffalo, director of the New York State Institute for the Study of Malignant Disease. This will constitute part of the observance of the "Health and Happiness Week" arranged by the Minnesota Public Health Association in cooperation with other social and civic organizations.

The rapidly growing movement in favor of an annual medical examination for every person, sick or well, promises much benefit in the reduction of the death rate from cancer as well as that from tuberculosis. Cancer is by no means a hopelessly fatal disease, and undoubtedly many cases of this disease would be recognized in time for treatment in the early stages, when cure is a comparatively simple matter, if people were in the habit of consulting their physicians once a year or even at shorter intervals, and having a general physical examination. Statistics independently gathered by many surgeons prove that the average cancer patient waits a year or more after observing some suspicious condition before seeking the treatment which is then often too late. This disastrous delay is the main, if not the sole, obstacle to the successful treatment of cancer at the present time. All good physicians, however, are familiar with the warning signs of the approach of this dangerous disease, and, if given a chance to examine their patients once a year, especially after the age of 30, they could undoubtedly save many of them from death before their time.

A new general hospital at Van Wert, Ohio, erected and equipped at a cost of approximately $100,000 and presented to Van Wert county by George H. Marsh, a local philanthropist, was formally opened December 5. The building is a substantial structure of three stories and basement, with inclosed sun porches extending from the first and second floors at either end. It has a capacity of 55 beds, and the equipment, which includes a pathological laboratory, is said to be modern throughout.

THE COST OF OPERATING A MOTOR AMBULANCE

Comparison Between Horses, Electrics, and Gasoline Cars—Many Items of Expense Easily Comparable—Final Deductions Indicate Preference for Gasoline—United States Army and Navy Departments Do Not Agree on Types or Costs.

By WALDON FAWCETT, Washington, D. C.

THE increase in the price of gasoline is likely to compel hospital executives to accord a somewhat closer scrutiny than has heretofore been bestowed on the cost of operating a motor ambulance. Gasoline is, of course, only one item of the maintenance charges of the horseless ambulance, but it is one of the most important operating items, if not, indeed, the most important; perchance depreciation of the vehicle is not figured as a part of upkeep. An increase of 100 percent in the gasoline bill of a hospital might not be regarded so seriously if it were but a temporary embarrassment, as in the case of various articles the prices of which have been inflated by war conditions, but the leading authorities are fairly unanimous in the prediction that gasoline prices will never return to the old low levels and that consumers may consider themselves fortunate if there are not further advances.

Up to this time the many advantages, real or seeming, of the motor ambulance over the horse-drawn vehicle have caused hospital authorities and medical officers to frankly ignore any discrepancies either in the first cost or expense of upkeep as between the two types. The achievements of motor ambulances—many of them of American make—in the present European war have proven a strong argument, and so has also the experience of the United States army expedition in Mexico. An official of the surgeon-general's office recently remarked: "We have just brought wounded out of Mexico by motor ambulances, making a run of 307 miles in three days. With the mule-drawn ambulances that trip would have required ten days." That official is converted to the motor ambulance, we might almost say, regardless of cost, and he has his counterpart in the administrator of many a city hospital who esteems the quick getaway of the motor vehicle quite as highly as the army man does its endurance for long runs.

Not only has the superior efficiency of the motor ambulance caused many a person in authority to deliberately shut his eyes to the expense of maintenance, once it was demonstrated that the cost of upkeep was not prohibitive, but an additional influence has been found in the fact that a large proportion of the motor ambulances now in use by public hospitals throughout the United States have been donated by friends of the institutions. Indeed, a motor ambulance has come to rank in recent years as a favorite form of gift for the patron who would perhaps never have thought of bestowing a horse-drawn vehicle, but who deems a motor ambulance quite as practical a contribution as the outfitting of a room or ward.

With first cost thus happily taken care of, some hospital officials are prone to overlook, in figuring upkeep, the items of depreciation and interest on investment. Yet these charges, and especially the first mentioned, are decidedly important details, particularly by reason of the rapid rate of depreciation commonly allotted on automobiles. To appreciate the significance of a proper annual charging off for depreciation, it may be mentioned that the United States Government figures on all its motor cars an annual depreciation of 20 percent, which would give the car a life of five years, and there are experts who go so far as to declare that 35 percent depreciation should be allowed on a car for the first year of service.

Granting that depreciation at not much less than 20 percent per annum and interest on investment at, say, 5 percent should be figured in, along with insurance premiums, as part of the upkeep of a motor ambulance, it follows that the lower first cost of present-day motor ambulances is a boon not to be lightly esteemed. With present prices for motor ambulances ranging down from, say, $2,500 to about $500, it goes without saying that there is a marked difference in all the above items as compared with the situation when practically the only motor ambulances in the market were the electric vehicles and the "steamers," each of which types cost in the neighborhood of $4,500.

Incidentally it may be noted that the change in practice from the electrically driven ambulance to the gasoline car has had important bearing on the "overhead" for this feature of hospital equipment. Formerly the electric ambulances were in almost universal use at United States Government hospitals, such as the naval hospitals, and at numerous public and private hospitals throughout the country, but such has been the change of sentiment on this score that the writer has been unable to learn of a single hospital that is today making use of the electric ambulance. Loss of time, necessary for recharging the batteries, and slow speed in responding to emergency calls constituted two indictments found against the electrics by hospital authorities, but to these considerations

were added those of relatively high first cost and upkeep.

Tire expense is an important responsibility in connection with the maintenance of a motor ambulance, since the average ambulance will, under

Fig. 1. View showing interior arrangement of United States Navy Department (Bureau of Medicine and Surgery) standard motor ambulance.

the most favorable conditions, wear out one set of tires a year, and yet tires are a commodity where skimping on first cost is seldom an economy in the long run. Under all conditions of hospital service, and especially if emergency cases are to be handled, it is obviously desirable to reduce to a minimum "blow-outs" and other tire troubles that are invited when quality in tires is sacrificed, and similarly the most efficient makes of nonskid tires on all four wheels are worth-while insurance against contingencies when antiskid tires are not in use on the wheels.

The tire bill for the hospital ambulance will be found to bear at all times direct relation to the class of vehicle employed. Thus, whereas the heavier ambulance, with its long wheel base, more powerful springs, etc., gains in the quality of easy riding, the larger wheels that contribute to this mean larger initial expense for tires, and more frequent replacements are necessary, owing to the greater weight of the car. Operators of an auto-ambulance weighing 4,000 pounds have reason to congratulate themselves if the tires yield an average mileage of 6,000 to 7,000, such as is common with ambulances weighing under 3,000 pounds, and, going down a step in the scale of weight, we find that the light car may finish 10,000 miles with tires in better shape than those of the car of intermediate weight after 7,000 miles.

Authorities seem to agree that there is no reason why the tire bills for the average automobile ambulance should be higher than those for a commercial vehicle using tires of the same size, and, of course, it is unusual for a hospital car to cover day by day as many miles in any given period as a delivery car in the service of a local merchant or department store. The higher average speed at which autoambulances are operated may shorten somewhat the life of the tires, but there is evidence to support the theory that the high speed is not so costly as the sudden application of brakes, which is frequently necessary in the operation of ambulances and which causes the rear tires to grind out their life against city pavements.

Perhaps the heart of the whole question of whether the automobile ambulance is a profitable

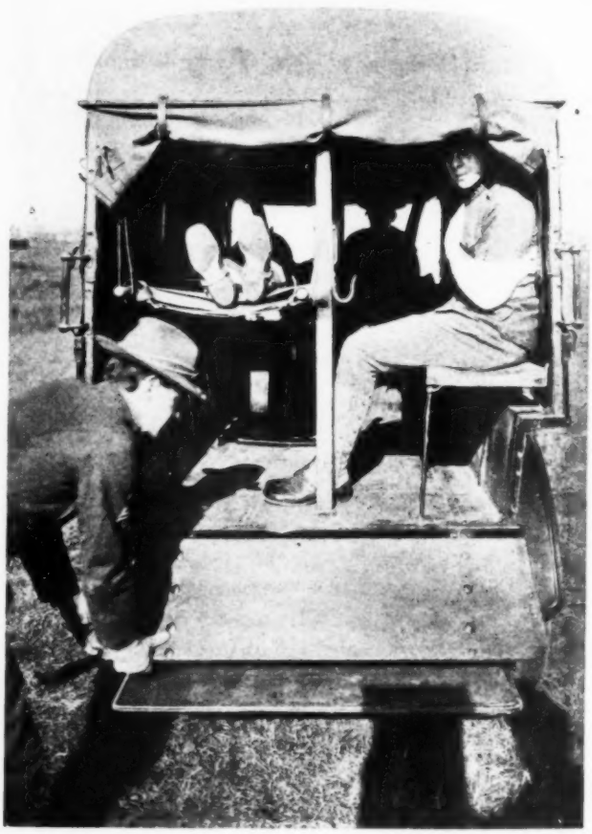

Fig. 2. Rear end view of a United States army motor ambulance.

investment because an economical one lies in a comparison of first cost and cost of operation of the motor ambulance contrasted with the corresponding figures for a horse-drawn ambulance. Unfortunately detailed statistics presenting this deadly parallel are not as numerous as might be desired, and as probably would be the case were

hospital executives less prone to surrender to the convenience of the motor ambulance without close inspection of its financial aspects. Probably the most accurate information designed to have an estimate made of the two types of locomotion has been gathered by the United States War Department and the United States Navy Department, and, whereas much of this covers ambulance operation under conditions that do not approximate those at the average urban hospital, nevertheless the conclusions in favor of the motor ambulance may be accepted as of wide application.

One disclosure as a result of governmental investigation is that there is not the difference that many persons have supposed in the first cost of the two types of ambulances. To cite a concrete case, it may be said that the Bureau of Medicine and Surgery of the United States Navy Department now purchases, on its standard specifications, a high-class motor ambulance that costs, delivered, $2,200. The navy officials figure that a horse-drawn ambulance of equivalent capacity would cost $800 for the vehicle, $500 for horses, and $100 for harness, etc., a total investment of $1,400 as compared with $2,200. It is held, however, that, whereas the balance is thus in favor of the horse-drawn vehicle, this comparison presupposes a situation that would exist only at a small hospital or one of somewhat restricted operations.

In the case of a large hospital, or an institution handling a large number of cases, the Navy Department officials figure that, whereas a single motor ambulance can do the work, it would be necessary to provide two horse-drawn vehicles if reliance were placed on the latter type. With two ambulances (single-horse type) three horses would be necessary, to allow for one animal in reserve, just as allowance of two horses is made when but one ambulance is provided. With two ambulances and three horses it is easy to figure, on the basis of the above figures, that the total first cost is above that for a motor ambulance, and the advantage thus goes to the motor under these circumstances, unless it can be figured that a horse-drawn vehicle and the animals to draw it can be counted on to give longer continuous service than is granted to the auto on the depreciation basis above outlined.

Repairs must, in the case of either type of ambulance, be estimated. Advocates of the horse-drawn ambulance are wont to contend that repairs in the case of an automobile will run higher than in the case of the former vehicle, but there are, of course, no hard and fast rules that apply, and motor enthusiasts point out in rebuttal that the loss by death of an ambulance horse represents an expense that has no counterpart in automobile maintenance, barring the case of an accident involving serious damage to the vehicle and which may occur with either type of ambulance. The claim that the wage of a man competent to drive a horse-drawn ambulance is lower than the salary demanded by a chauffeur-mechanician is offset by the contention that the man who can take care of his own car can make many minor repairs for the equivalent of which the other driver would call on a blacksmith, and that furthermore there is the advantage that an automobile driver is always available as stretcher man or to assist the ambulance surgeon on call, whereas the other driver must remain in his seat because it is not safe to leave the horses unattended.

Figures that have been compiled by the United States Army Medical Corps officers representing cost accounting for motor ambulances of a class made possible through the use of the best known make of cheap motor on the American market put a different aspect on the case from that presented on the basis of the $2,200 automobile ambulance built to the order of the Navy Department, as above outlined. The army computation would make it appear that where this low-price ambulance can be used—and it has been used successfully under severe rural road conditions in both Europe and the United States—it has no rival from an economic standpoint either in the matter of first cost or maintenance.

The army figures allow $360 as the first cost of the chassis and $225 for the special ambulance body, which is mounted on the standard chassis. Spare parts and accessories, such as extra tires, bring the total initial cost of this ambulance, exclusive of the four litters, up to $621.10. This low first cost means, of course, proportionately small loss by depreciation, whereas the fact that tire casings for this car are obtainable at prices of $10 to $15 each, and that the car averages more than twenty miles to the gallon of gasoline, holds the operating expense to the minimum. Indeed, the Federal ambulance experts figure that on this type of motor ambulance their oil and gasoline expense is little more than 2 cents per mile. It may be of interest, also, to note that they estimate repairs at $50 per year, which is at slightly more than 8 percent of the first cost of the ambulance.

In the comparisons instituted at the War Department the expense account of the type of ambulance just described was placed in deadly parallel, not with a horse-drawn ambulance, such as is common in general hospital practice, but with a four-mule ambulance, such as is standard in our military establishment. The first cost of the mule-

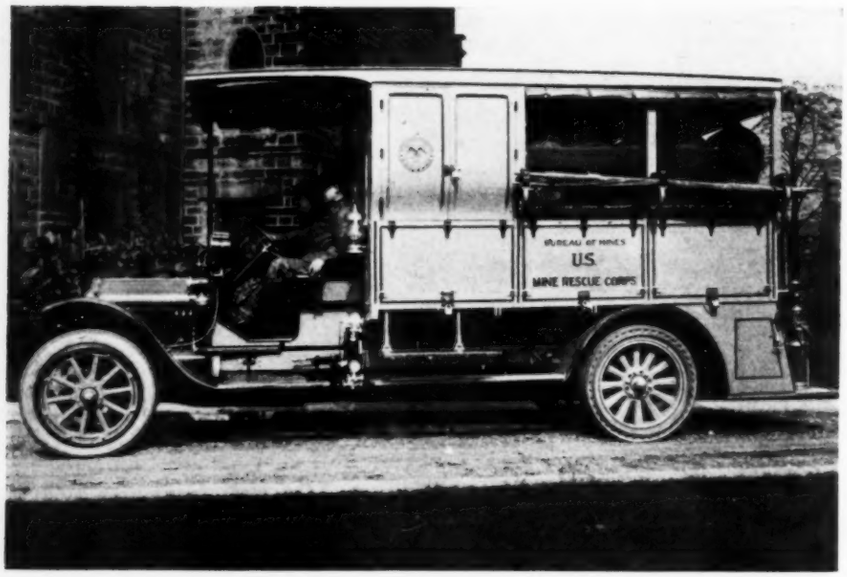

Fig. 3. Unique combination motor ambulance and relief car in use by the United States Bureau of Mines.

drawn ambulance is given as $1,154.66, or upward of double that of the motor ambulance, and, even if we eliminate the item of $400 for the two lead mules, it may be appreciated that the first cost is yet in excess of the initial cost of the motor vehicle. Army officers are wont to estimate the cost of forage for a horse at more than $100 per year, so that it will be seen that, even were a hospital to content itself with a single horse, the feed bill would equal the gasoline bill for a light motor ambulance, and, if there be an extra horse, the forage bill would far exceed the gasoline bill, for it must be remembered that prices of hay, oats, and straw have advanced as well as the price of gasoline.

Garage expense versus stable expense presents another angle of the ambulance problem that may confront the hospital executive. Here, however, there is little opportunity to claim an advantage on either side. It is virtually essential, of course, that ambulance quarters be provided in close proximity to the hospital; but on that score it is quite as easy to construct a garage that will conform to city fire regulations as it is to provide a stable that will meet municipal health regulations, to say nothing of the consideration of the health of the patients in the institution. Quarters for an autoambulance should occupy less space than shelter for one or two horse-drawn vehicles and for the horse or horses. If garage space must be rented, the rental will, of course, depend entirely on the city and location, but perhaps it is safe to hazard a guess of $5 to $10 per month for a small building capable of housing the autoambulance. This presupposes that all the work of washing the car, making minor repairs, etc., will be performed, as is usually the case, by the driver. If commercial garage service is used for storage, oiling, and washing of the car, etc., the charge will be from $15 upward per month.

Maintenance costs in the case of an automobile ambulance are likely to be affected somewhat by the style of car body used. In many instances, as has been indicated, modern motor ambulances are not the product of the factory that produces the engine. On the contrary, the hospital authorities contract for any desired chassis and then have installed on that chassis a body built to their particular specifications, the work being performed perhaps by a local carriage builder. That an ambulance body with solid sides has advantages, no one will gainsay, but it must also be recognized that solid sides mean added weight, with all the attendant penalties in cost of upkeep, and that furthermore such a body, if subjected to much strain and stress in every-day

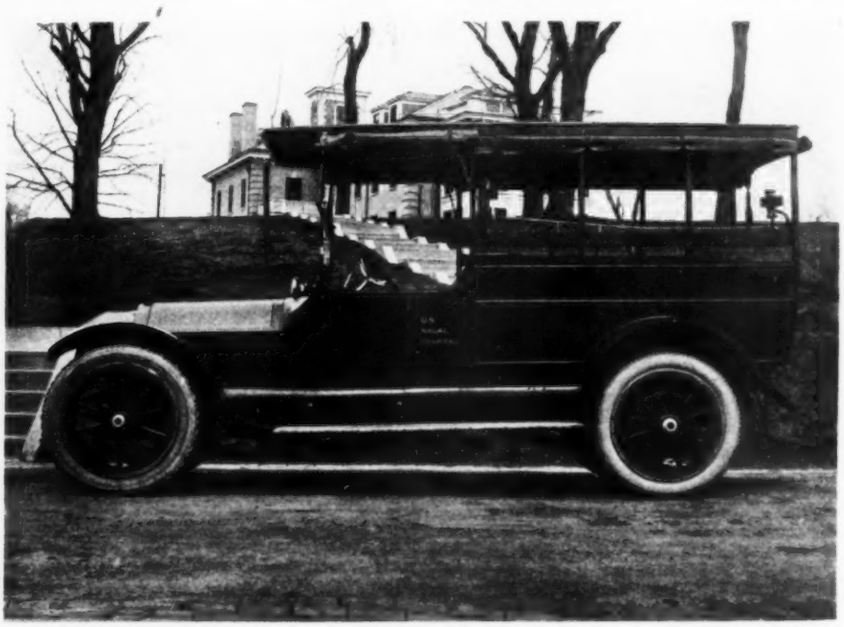

Fig. 4. Type of motor ambulance designed in accordance with United States Government specifications.

service—for instance, frequent joltings over car tracks at high speed—will require rather more than the normal amount of repairs. All of which makes it of interest that the latest practice with respect to United States military and naval ambulances calls for curtains at sides and ends instead of solid surfaces. These curtains roll up and fasten permanently when the state of the weather and the condition of the patients permit, whereas, when lowered and fastened in position, the curtains afford protection adequate for anything but the most severe climates. Aside from economical considerations, the arrangement of open sides, with curtains, is considered advantageous where a considerable proportion of the patients are sitting cases. A standard United States army motor ambulance will accommodate on the divided folding seats on either side of the car a total of eight sitting cases, or the disposition of the interior equipment may be made to provide for two litter cases and four sitting cases.

With a motor ambulance or ambulances in continuous operation for a hospital over a term of years, it will be found that the most important influence is exerted on the cost of maintenance and operation by the policy pursued with respect to replacement. The motor ambulance may be continued in service until it is pretty nearly worn out—an effective life in excess, probably, of the five years above allotted—or the plan may be followed of "trading in" the old car and receiving a new one, say, every second or third year. Each plan has its advocates, and it is not the purpose to here attempt to declare unqualifiedly in favor of either system. Nor is there as much difference in cost, as the uninitiated might suppose, owing to the fact that a car that has run only 10,000 or 15,000 miles can usually be sold at a very fair proportion of its original price, whereas the car that has covered 30,000 to 50,000 miles may bring a comparatively insignificant price in the second-hand market.

The ambulance expert who believes in getting full value out of a car and then discarding it for whatever it will bring, even as junk if necessary, contends, and probably with good reason, that in a term of years he will pay much less money to the ambulance builders than the official who keeps abreast of the latest practice by frequent exchanges of an old model for a new one. On the other hand, it must be admitted that the policy of squeezing the last ounce of service from a motor ambulance means in the later life of the vehicle repair bills far in excess of those incurred by the man or institution that makes frequent renewal of equipment. Whatever the preference as to replacement policy, there are several considerations that are comforting to all users of motor ambulances. One of these is that automobile engineering has been so highly perfected that no longer does each successive year find radical innovations and improvements that render a vehicle out of date in twelve months. Another turn of affairs welcome to hospital executives is the development of the market for used cars, suitable for delivery service and other commercial purposes. This insures a remunerative market at all times for used motor ambulances.

THE FIRST DIAGNOSIS HOSPITAL

New York Society Will Create a Unique Institution

A banquet given at the Waldorf-Astoria in New York December 5 by the New York Diagnostic Society, in honor of its president, Dr. M. Joseph Mandelbaum, was made the occasion for the announcement of a plan of the society for the establishment of a diagnosis hospital, which will be the first of its kind in the country. In an address Dr. Mandelbaum declared that, in New York city alone, 3,000,000 people suffer because of the inability of general practitioners to obtain proper facilities for complete diagnostic investigation. "Insidious disease, chronic illness, and premature death are the results of this unfortunate state of affairs," he asserted. "Out of 8,000 physicians in this vicinity," Dr. Mandelbaum continued, "only seven are equipped with apparatus for making a thorough examination of the heart. How many hospitals do you think are equipped with the electrocardiograph, for instance? Less than you can count on the fingers of both hands."

Dr. Mandelbaum said further that the society is developing a system whereby the fees charged patients in the new institution will be gauged according to their earnings, and those not able to pay at the time they require service will be cared for and an arrangement made under which they will be permitted to meet their indebtedness by convenient installments after they have recovered.

Nearly $100,000 has already been subscribed toward a building fund, and it is believed that an additional $100,000 to complete the sum sought can be raised in a short time. Dr. Julius Auerbach is treasurer of the fund. It is understood that Dr. Mandelbaum will be the active head of the hospital.

The need of diagnostic hospitals was voiced by Dr. Charles Mayo in an address before the annual convention of the Catholic Hospital Association last summer. Dr. Mayo said: "With all of our various hospitals, general and special, there is still need for one more—a hospital for diagnosis. Medicine has become so vast, so monumental, that it is no longer possible for one man to encompass it. Team-work, as exemplified in large clinics and in hospitals, has become necessary in the care of the rare and complicated cases representing 10 percent of the total, with special examinations for the well-known diseases, in order that diagnosis may be proved and complications not overlooked. In large cities and in the medical departments of universities diagnosis hospitals should be founded solely for the purpose of observing patients, the making of all kinds of special examinations, including laboratory tests, special vaccines, and x-ray examinations. When the diagnosis has been completed, patients could be referred to their home physician, with the diagnosis and plan of treatment."

THE STORY OF A NEW ENGLAND COUNTY HOSPITAL

Definite Rules Enforced Against Physicians and All Others—Proper Staff Assignments Give Responsibility—Wide Range of Cases When Good Diagnosis Is Made

By J. M. FRENCH, M. D., Milford, Mass.

UP to 1903 we had no hospital in Milford. The town at that time had a population of a little over 12,000, and its close-by companion town of Hopedale about 2,000. Milford is a manufacturing town, thirty-three miles from Boston, producing largely granite for building purposes, shoes, and rubber goods. Hopedale is the home of the Draper Company plant, which manufactures looms and other machinery for cotton mills. The interests of the two towns are largely the same.

For a number of years it had been recognized that there was need of a hospital for these two towns, but no one had been able to suggest how it could be obtained. The local medical society held a meeting to discuss the situation, and voiced the public need. The board of trade took up the matter and appointed a committee to see what could be done. A few summer boarders in a near-by hill town, who felt the practical need, set the ball rolling by making a small contribution to start a hospital fund. One of our physicians stated the case to Mrs. Draper, wife of E. S. Draper, of the Draper Company (afterward Governor Draper), and she and her husband became interested. Then things began to be done. In 1900 the Milford Hospital corporation was organized, a convenient location was furnished by Mr. Draper, and in 1903 the completed hospital, built, furnished, and fully equipped by Mr. and Mrs. Draper, was presented to the corporation and began its work.

It was a small hospital, but in every way modern and well equipped. No money or pains were spared by its donors to make it equal to the best. Beginning with a capacity of 15 beds, and treating a little over 100 patients the first year, it has grown steadily from that time to the present. An annex was added to the main hospital in 1909, and another will be needed very soon. At present the capacity of the hospital is about 50, and over 700 patients were treated during the past year—that is, from June 1, 1915, to June 1, 1916. Plans are now being made for a contagious ward, which is to occupy a separate building a little way from the main one. It is probable that a separate building will soon be needed for maternity cases, as this branch of our work is rapidly increasing. Only four babies were born in the hospital the first year, while last year there were 106. It is coming to be generally understood that these cases can be attended much more satisfactorily there than at home, with better results and at much less expense.

In 1905 a training school for nurses was organized, with a three years' course of training, and classes have been graduated yearly from 1908 until the present time. A good-sized dwelling house was donated by Governor Draper to be used as a nurses' home, and was so used until it was outgrown, and a part of the nurses had to be housed elsewhere. Both Governor and Mrs. Draper had now passed away, but their children have taken up their work, and this present year have completed and donated to the hospital a fine home for the nurses as a memorial to their parents. This is fitted up for 35 nurses, and in its equipment has probably no superior in the state. The last graduating class numbered 9, and there are now 29 nurses in training. Thus the work in all its branches is growing constantly, and new buildings and new equipments are provided only when they are urgently demanded.

Looking back over the more than thirty years during which I have practiced medicine in Milford, I can see that since the hospital has come the town is a better place in which to live and a better place in which to practice medicine, for one thing, on account of the opportunity which it offers for the better care and treatment of the sick. Of course the hospital is needed least of all by the wealthier citizens, since they—and they alone—can afford the best of care for their sick ones in their own homes. It is of more value to the fairly well-to-do, because it offers to them better care for less money than they can secure in their own homes. It is of by far the greatest value to the really poor, who are unable to provide any proper care for their sick at home, and who must, therefore, without the hospital, of necessity do without any proper care and nursing, or else both doctors and nurses must serve without compensation; and even then, on account of the lack of proper conveniences, the best results cannot be obtained. But with the hospital conducted as most country hospitals are today, the sick poor are given the best of care, at whatever price they are able to pay, or at no cost at all to them if they are very poor and unable to pay anything.

We began our hospital without any endowment, and with no provision for free beds or free treatment. But, even under these circumstances, one

of the first lessons which was taught to the medical staff by the president of the hospital was this: "When you have a patient seriously ill, and in need of care and attention which cannot be given him at home, *the hospital is the place for that patient.*" In that way we learned to bring them in, of course taking due care that provision for payment was made by those who were able to pay; but when one was wholly unable to pay, we brought him in just the same, and let the hospital authorities look out for the rest. As a rule, when neither the patient nor his friends are able to pay, either the town or the state looks out for the case.

Some years ago I was called to attend a man seriously ill with pneumonia, whose home was a sad example of filth and destitution, coupled with ignorance and inefficiency. It was impossible to give him any proper care in his own home, and so I tried my best at the outset to have him taken to the hospital. But his wife refused to let him go, and it was not until he had been ill nearly two weeks, and it became evident that he had almost no chance of recovery without a change of conditions, that she finally consented. By this time he had become so greatly weakened as to make his removal a source of danger, and he was considerably worse at first as the result of it. After a long illness, however, he recovered—owing, no doubt, to the better conditions at the hospital as compared with his home.

Sometimes the hospital is full, and it becomes a question whether a patient can be received. In such cases our hospital, and I suppose every well-regulated public hospital, decides, not in favor of the one who can pay the most, but of the one who is most in need of hospital treatment, which is usually the one who can pay the least, or, more likely, nothing at all. At one time I remember I had a patient dangerously ill, and needing care and treatment which he could not get at home. I knew that the hospital at that time was full, and had absolutely no beds available; so that, if my patient had been one who could have had any reasonable care at home, he would have been refused admittance. So, instead of asking whether there was room for him, I said to the management, "Here is a man who is in urgent need of care which he cannot get at home; I think we shall have to make room for him somehow." And make room for him they did—I am sure I do not know how. Now, any institution which will do these things for its citizens gives greater safety to the lives and health of its people and is a blessing to the community as a whole.

Many times when we had no hospital we, the physicians of the town, suffered much anxiety of mind ourselves, and our patients suffered both in body and mind, because we were unable to give them proper care, and especially to secure expert advice and medical and surgical treatment, in season to be of service to them. We had no place to take them, no proper facilities to care for and treat them, and so they died. Now, with the hospital at hand, and skilled consultants within easy reach (the best in the state can be brought to us in scarcely more than an hour's time), and then with the best of nursing care to help them out during and after an operation, if one is needed —under these circumstances, I say, our patients live where in the prehospital days they died; and, besides this, the practice of medicine has more of enjoyment and less of anxiety in it than it had in the past.

Perhaps it may not be out of place to speak here of the influence of the hospital on the medical profession of the town. The best men of the profession, both in the community and as consultants, are brought together here, and, through mutual consultations, observation, assistance, and interchange of opinions and experiences, there is developed in the local physicians a greater degree of ability and skill than they would otherwise have attained. Nor do I consider that the gain is wholly confined to the local men, for many times I have heard the members of the consulting staff say that they had found cases in our hospital which were unlike any they had seen in the city hospitals, and had gained valuable information and experience from our country hospital. As a rule, however, we are the greater gainers; notably is this true with respect to the major surgical operations.

During the first years of our hospital, for example, nearly all of the abdominal and other major surgery was done by the members of our consulting staff, who came from Boston and Worcester to operate for appendicitis, gallstones, gastric and intestinal ulcers, uterine and ovarian tumors, and the like, while today almost all of this work is done by our own men, and well done, too. This not only makes them of more value to the hospital, but to the community—that is, their patients—and also increases their earning power, thus helping themselves and their families. In this way these men are recompensed for the work which they do in the hospital without any direct pay; and, while there can be no doubt that the hospital really does take much money from the doctor's pocket, yet I have never noticed any general hesitation on the part of the members of the medical profession, here or elsewhere, in accepting appointments on the hospital staff. It seems, therefore, as though this were an arrangement to the advantage of both parties; and, with every im-

provement in the average skill of the local medical profession, the whole community is benefited.

Convincing proof that a hospital is an advantage to its community is found in the fact that it is an exceedingly rare thing for a hospital, once established in a country town, to be given up; also in the further fact that the use of the hospital by the inhabitants of surrounding towns having none of their own almost surely increases from year to year; also the whole number of patients treated each year increases almost regularly. Given the supply, the demand is sure to follow, and to increase. In our own case, in a hospital treating but 100 patients the first year, the increase has averaged about 50 patients each year, and this rate seems likely to continue.

There are many ways of managing a hospital, and no doubt one way may be best adapted to one community and another way to another. Ours is an open hospital, to which any reputable physician may bring his patients and treat them himself, receiving such compensation as may be agreed on between them and himself. Or, if he cannot attend to them himself, he can turn them over to any member of the staff or other physician who may be mutually agreed on. This relates to the treatment of patients in private rooms, and not in the public wards, where the rates are less, and a different rule is followed. Since all ward patients pay less than the actual cost of their care, and the hospital is responsible for them as well as the private patients, it is found advisable that they should all be under the care of the members of the local staff, since in no other way can the hospital be made responsible for the conduct of the wards. Therefore, any physician who brings a patient into the public wards turns such patient over to the attending physician, and has no further control over the case himself. The members of the staff receive no compensation for their service in the wards; but any physician, whether on the staff or not, is allowed to receive his usual compensation for treating patients in private rooms. In this way the doctors gladly send their patients to the hospital, and do not feel that the hospital is working against their interests.

There are, of course, certain regulations of the hospital regarding the care and management of patients, and these must be observed by all. It has once or twice happened that a physician or surgeon was not sufficiently aseptic or careful in other respects to satisfy the demands of the hospital, and special rules have been made to provide for such cases, but they have been very few.

The business of the hospital is conducted by the trustees by means of a managing board, which is composed mainly of business men, with two medical men selected by the staff to look out for the medical and surgical interests of the hospital; and, during the thirteen years of its existence, in only a single instance has there been any disagreement between the medical members and the full board in any matter relating to the medical management of the hospital.

By our arrangement two men serve together for a period of two months, one looking after the medical patients, the other after the surgical, but the two cooperating in every way they may find advisable. This arrangement has proved very satisfactory in our case, though in some other places it is not considered advisable. One member of our staff is a homeopathic physician; but he was not appointed as a homeopathist, nor was any mention made of the fact that he was a homeopathist; he was appointed simply as a physician, and serves on the same terms as the other members. In fact, we recognize no difference, and this is made the easier as he serves on the surgical side.

Thus far no member of our attending staff has been selected from outside the two towns of Milford and Hopedale, nor is it probable that any physician further away would be willing to give up the time which would necessarily be required of him to come the greater distance and give the proper service to the hospital patients.

An important adjunct to our hospital is the training school for nurses which is connected with it. This was organized in 1905, and has proved a benefit not only to the hospital directly, but to the doctors and the whole community by its valuable nursing service. It provides a three-years' course of training for the nurses, and during the second and third years these nurses are sent out into the homes of the community to do private nursing when called on to do so by the citizens and they can be spared from the hospital. This is considered as a valuable part of their training, combining, as it does, theory and practice under the supervision of their instructors.

When a nurse is graduated and sent out to do private nursing—which is the service in which by far the greater part of our nurses are engaged—when she has had no practice whatever in anything but hospital nursing, she is sent out to do what she has never done, and yet she is a graduate nurse. It does not seem to us that this is fair, either to the nurse or to her patients, let alone the physician for whom she is working. On the other hand, this home and community service is very much valued by our people as a whole, and these student nurses are very much in demand. In addition to this local home nursing, all our nurses spend four months of their last year in the city of Cambridge, where they serve under the immediate

supervision of competent instructors as district or visiting nurses, largely in obstetric and surgical cases. This work has proved of great value to them.

The teaching staff consists of nine physicians and five nurses, who give theoretical and practical instruction in all the branches required in their service. Nine nurses were graduated in the last class.

To sum up, the advantages which our hospital has proved to our community are three: first, its excellent facilities for the medical and surgical treatment of the sick, which are furnished by the hospital itself; second, the increased efficiency and skill which it has brought to the physicians of the town as a whole through the opportunities and experience afforded by the hospital; and third, the greatly improved nursing service and better care of the sick in the homes of the community, due to the training of nurses in the hospital, and also in the homes of the sick under the care and supervision of their teachers. In this connection I remember that it was publicly stated by Governor Draper that, in providing a hospital for the towns of Milford and Hopedale, he was especially influenced by the belief that such an institution would prove a benefit to the community, both by improving the quality of its medical men and by furnishing a more satisfactory nursing service for the sick. Both these beliefs have proved true.

People often ask one another, "What should we do without the hospital? How could we get along without it now?" And indeed, to go back now to the old ways and get along without the hospital would be like giving up the electric cars, electric lights, telephones, and motor cars. We simply should not know what to do or how to get along.

THE SMALL COMMUNITY HOSPITAL—THE EQUIPMENT

Lists of Furniture for Offices, Reception Rooms, Kitchen, Dining and Service Rooms—Private Rooms and Wards—Operating Suite—Drug Room, Physical Therapy—Laboratory and X-Ray Department

By JOHN ALLAN HORNSBY, M. D., Chicago

PAPER VI

IN our study of the small community hospital we have now discussed the survey of the community to determine whether a hospital, and what kind, seems to be needed, the raising of funds, the temporary or working organization, planning of the building, and the interior arrangement.

The construction of the building is wholly an architectural job, with which neither the board nor the superintendent has very much to do, excepting to look on and follow the evolution of its plans; and we will assume that now the hospital is completed, that the permanent installation is all in, and we are ready to equip the building for operation.

It is to this task that we address ourselves this month, and it is not an easy task, because conditions will vary in different hospitals, and equipment that would suit admirably in one will not serve at all in another. For this reason we are finding it necessary to set down more articles of equipment than any small hospital will ever need or install, but we do so in order that those charged with the responsibility may have a wide choice, and the list given is complete enough to enable superintendent and board members to select what they may deem desirable in their particular problem.

It will be noted that we begin at the very entrance of the hospital, taking up the offices, reception rooms, and the examination or admission rooms. We continue then with the domestic departments, and go by easy stages to the rooms and wards, and then to the special or scientific departments. It will be noted that we have not attempted to list food supplies or drugs, or surgical instruments, for the reason that the hospital pharmacy, in these days, is undergoing vast evolution, and the simplicity or elaborateness of the drug supply will depend almost wholly on the character of the work to be done and the wishes of the medical staff. Food supplies are elastic, and the list of those that might be expected to find a place in any hospital would be a complete list of all the food products that enter into the social life of today; hence such a list would be too long to justify its inclusion. Surgical instruments depend wholly on the scope of the surgical work to be performed, the character and training of the surgeons, the size of the surgical staff and the needs of its individual members; such a list must obviously be prepared in cooperation with the various surgical services, and the specialists in each service are the best judges of their needs. Suffice it to say that it will be practically impossible for any hospital to buy all the surgical instruments that its various surgeons may require. Every man who has attained a place that will justify his inclusion in a hospital staff will have his own notions about his instruments, and the hospital can undertake to furnish only those that may

be considered standard, leaving it to the various specialists to buy on their own account, to be kept for their own special use, any instruments that are outside of the standard supplies. It is the custom in most hospitals, whether large or small, for each surgeon to have his own instrument case, under his own lock and key, with a duplicate key in the hands of the head surgical nurse. This box should contain his special instruments, and it should be a part of the training of the pupil nurse to include on the tray whatever special instruments each surgeon may need for his various classical operations. The nurses should clean and keep in good order the instruments in these boxes, and it should be a part of their duty to see that no instrument in any box is permitted to be used, except in the rarest emergency, by anyone other than its rightful owner.

EQUIPMENT OF THE SMALL HOSPITAL

FRONT OFFICE

1 high desk for receiving clerk.
1 high stool for receiving clerk.
1 low desk for office clerk.
1 desk chair for office clerk.
1 card index file for admissions.
1 file cabinet for one month's clinical records.
1 file cabinet with drawers for bills.
1 room board for wall.
1 physicians' "in-and-out" register.
1 safe for money and patients' valuables, etc.

SUPERINTENDENT'S OFFICE

1 roll top desk.
1 swivel chair.
1 rotating book rack.
Some sectional book cases.
1 large rug.
2 arm chairs.
Some wall pictures.
1 letter filing cabinet.

RECEPTION ROOMS (ALL FURNISHED ALIKE)

1 large center table.
1 small side table.
1 lounge or couch.
1 rocking chair.
6 comfortable arm chairs.
Some appropriate wall pictures.

DOCTOR'S EXAMINING OFFICE

1 gynecological chair.
1 flat top desk.
1 swivel chair.
2 arm chairs.
1 side table.
1 extension light.
1 small instrument cabinet.
1 combined letter and case cabinet.

KITCHENS AND DINING ROOMS

1 range.
1 broiler and toaster combined.
1 3-section vertical steam cooker.
1 3-compartment deep sink, cypress or alberene stone, brass-rimmed.
1 large cook's table with drawers.
1 utensil rack on floor.
1 utensil rack suspended over range.
1 dish warming cabinet.
Dish washer.
Large carving knives and forks, spatulas.
Large spoons and ladles, wood and metal.
Pans—pie pans, sauce pans, drip pans, baking pans, frying pans.
Cast pots, various sizes.
Colanders and drain pans.
1 condiment case with individual receptacles and shakers.
Soup kettles and stock boiler.
Whips, cream and egg.
Glass jars for sugar, flour, etc., and cabinet.
Biscuit and cake cutters, assorted.
Knife boards, wooden bowls, rolling pins and bread boards, potato mashers.
Ice cream freezers (large and small).
Scoops (large and small).
Can openers.
Pressers—lemon and meat.
Casseroles and lids.
Ramekins.
Muffin and cake rings.
Egg poachers.
Double boilers (large and small).
Waffle irons.
Dippers (large and small).
Pudding and jelly molds.

PREPARATION AND BUTCHER'S ROOM

1 fish icing box.
1 butcher's block.
1 strong table, metal top.
1 line shaft, ceiling motor, pulleys.
1 meat slicer, belt and pulley.
1 meat grinder, belt and pulley.
1 potato peeler, belt and pulley.
1 ice cream freezer, belt and pulley.
1 ice crusher, belt and pulley.
1 bread slicer.
1 potato masher.
1 long low bench.

DINING ROOMS

Tables and chairs.
1 serving cabinet, for each room.
Serving tables, for each room.

FLOOR SERVING ROOMS

1 small steam table with oven.
1 side table.
1 gas or electric plate.
1 ice box or refrigerator.
Cupboards for dishes.
Drawers for cutlery and napery.

CHINA AND GLASSWARE

Plates—dinner, breakfast, soup, bread and butter, cake (with covers).
Cups—coffee and tea, demi-tasse, custard, children's mugs.
Bowls—porridge, finger.
Saucers.
Pitchers—large water (large and small cream).
Tumblers—glass for wards and private rooms, wine and medicine glasses.
Tureens—soup—and gravy boats.
Dishes—large and individual vegetable, pudding, casserole.

CUTLERY AND SILVERWARE

Knives—dinner and breakfast, butter, carving (large and small), cake, parers.
Forks—dinner and breakfast, carving, pie, oyster.
Spoons—table, dessert, tea, mustard, soda.
Ladles—soup, gravy, punch.
Nut crackers.
Pitchers—coffee and tea (large and individual), syrup (large and individual).
Shakers—salt, pepper (large and individual).

LINENS, NAPERY, AND COTTON GOODS

Table cloths; napkins; dish towels; dish cloths; sheets; draw sheets, slips; mattress covers; wheel chair covers; towels, bath, face, and hand; wash rags; tray cloths; dresser and table covers; screen covers; stool covers; Morris chair covers; window curtains; laundry bags; nurses' caps and aprons; hospital gauze, assorted mesh; absorbent cotton; batting; assorted bandages, or bandage cloth; lot of indianhead; operating gowns.

UNIFORMS

For ushers, orderlies, maids, floor men.

JANITOR SUPPLIES

Mops; mop holders; mop pails; sponges; chamois; soap powder shakers; brooms; brushes—scrub, floor, radiator, toilet bowl, slop sink, clothes, and bottle washers; feather dusters; garbage cans for everywhere; soaps; soap powders; soda; bleach; oxalic acid; ammonia water; soap boiler.

TRUCKS

Food; laundry; garbage; medicine wagon; trunk; irrigation wagons.

SCALES

Drug room; laboratory; large and small for store rooms; for weighing patients; coal scales; nursery scales.

FURNITURE FOR PATIENTS

Private room—bed; mattress; 2 pillows; dresser; chiffonier; 1 rocker; 2 straight chairs, 1 Morris chair; commode; footstool; 1 small table; 1 bedside table; 1 3-section screen; nurse's couch, mattress and pillows.

Wards—beds; mattresses; pillows; bedside rugs; clothes lockers; 1 or 2 Morris chairs; footstools; straight chairs; 1 or 2 rockers; bedside tables; 1 large nurse's work table; nurse's desk and chair; 2 or 3 3-section screens; commode.

Sun parlors—willow furniture; arm and straight chairs; lounge; center table; book shelves.

APPARATUS FOR NURSING PATIENTS

Stretchers, collapsible and wheel; dressing carts; bed rests; back rests; bed elevators; bed rollers; wheel chairs; irrigation stands; examination lights on stands.

Enamelware—bed pans; urinals; wash pans; pus basins, nests; shallow dishes, nests; deep basins, nests; soap dishes; cups; pitchers, large and small; dressing jars; enema can; irrigation can.

Rubber goods—gloves; assorted rubber tubing; water bottles, ice bags, and caps; stomach and enema tubes; rubber tissue and dam; sheeting; Kelley pads; assorted catheters; Esmarch bandages and tourniquet rubber.

Miscellaneous—pins and safety pins; hypodermic syringes; clinical thermometers, mouth and rectal; scissors, assorted sizes for nurses.

SPECIAL DEPARTMENTS

OPERATING SUITE

Tables—operating, instrument, anesthetic, drum tables, work tables in nurses' work room, side tables in preparation room, writing table for doctors' room.

Shelf cabinet for operating room; wall cabinet for preparation room; stools, high and low.

Sterilizing Apparatus—water, dressing, instrument, salt solution, utensil, and mattress sterilizer; laparotomy drums and stand; dressing sterilizer carriage.

Miscellaneous—solution basins and stand; arm plunge on stand; goose neck reflector light; cautery apparatus; motor and bone drill, with tools; head lamp; lot of unbleached muslin for treated and plaster bandages; glass or enamel jars with covers for sterilizing articles; catgut and tendon, assorted; silk thread, black and white, assorted sizes; oiled muslin; green soap; shakers for powders, etc.; anesthetic apparatus and masks; head nurse's desk and chair; chairs, couch, and lockers for doctors; lockers and chairs for nurses' room.

MATERNITY DEPARTMENT

Labor room—special bed; wheel stretcher; cabinet for instruments; cabinet for sterile dressings; special light; resuscitation apparatus.

Sterilizing outfit as for operating suite.

NURSERY

Baby beds on stands; bath tubs; compartment table for dressing babies; incubator; low rockers without arms.

THE LABORATORY OF PATHOLOGY

Glassware—test tubes; beakers; flasks; glasses; assorted glass tubing; assorted bottles; reagent bottle.

Paraffine oven; autoclave; bunsen burners; microtome; special trocars; long hypodermic and spinal needles, with syringe; centrifuge; post-mortem set; microscopes; platinum wire; petrie dishes, nests; porcelain bath; filing cabinet.

DEPARTMENT OF HYDROTHERAPY

Mixing chambers to douch, needle, and shower; continuous bath with temperature control; massage table; light and heat cabinet; baking apparatus for parts of body; electric battery for treatments.

X-RAY DEPARTMENT

Machine, with switch board; table, recumbent and erect; tubes; fluoroscopes; treatment brushes and electrodes; plates and holders; filing cabinet; viewing box; dark room; sinks, baths, lights, dryers, shelves.

PHARMACY

Prescription case; scales, apothecary and avoirdupois; mortars and pestles, porcelain and iron, large and small; spatulas and ointment plates; pill molds; glassware; graduates, large and small; assorted bottles and corks; shelf bottles; labels; glass tubing, assorted; test tubes; beakers; powder and pill boxes, assorted.

Trachoma Hospitals in the Mountain Region of the South

According to Dr. John McMullen, the foundation of the little hospital for trachoma patients at Hindman, eastern Kentucky, has been followed by the establishment of six other similar centers, three in Kentucky and one each in Tennessee, West Virginia, and Virginia. During one year, routine examinations were made of 18,000 persons, 1,280 cases of trachoma were found, 112,000 treatments were given, and 1,687 operations performed. The confidence of the people has been slowly won by extension of the nursing service into the homes of the people. The first words of one patient after coming out of the anesthetic were, "Well, I did wake up, after all." It was learned that the mountain tradition ran: "If you go up to the hospital, doctors put you to sleep, and only one person in a hundred ever wakes up again." Because of his utter wretchedness as a blind pauper, this patient had taken the supposed desperate chance for his sight.

The Julia Work Hospital is a new institution at Plymouth, Ind. The building was formally opened December 3.

BARTINE GOES TO FLOWER HOSPITAL

Superintendent of Hospital for Ruptured and Crippled Makes Change After Twelve Years of Service

Effective January 1, Mr. Oliver H. Bartine, now superintendent of the Hospital for Ruptured and Crippled, New York, has tendered his resignation to accept the superint ndency of Flower Hospital. During the twelve years of his incumbency, Mr. Bartine, through his unflagging energy and effort, combined with a singular steadfastness of purpose, has not only laid a foundation that will last for a long time, but has been in large measure responsible for the present high standard of accomplishment which is synonymous with the name of the New York Hospital for Ruptured and Crippled.

The efficiency of Mr. Bartine's regime is most effectually demonstrated, not only from the standpoint of exceptional administrative ability in so far as hospital equipment and management are concerned, but also along the line of finance, such, for instance, as a greatly increased endowment fund and a per-capita operating expense decidedly less than that of similar institutions doing a like work.

In addition to his hospital connection, Mr. Bartine is also vice-chairman of the New York Committee on Aftercare of Infantile Paralysis Cases, organized at the suggestion of Dr. Haven Emerson, commissioner of health, and now doing a most notable work under the immediate supervision of Dr. Donald E. Baxter as director, whose services have been loaned to the committee by THE MODERN HOSPITAL.

State Versus County Care of the Insane

Dr. Owen Copp, superintendent of the Pennsylvania Hospital for the Insane, in a statement in support of the state as against the county hospital system, says: "Experience teaches that the state alone has provided or can reasonably be expected to provide sufficiently for medical treatment and scientific study of the insane. . . . The so-called economy of local and county care is a delusion in that it is a saving by deprivation of sufficient medical attention, facilities for treatment, precautions against secondary infections, and reproduction of defectives. The motive of the county care system is mercenary. State allowance is usually sufficient to relieve local units of any considerable expense. Often actual profit is made out of state payments for the support of mental dependents."

Graduation of the First Class of Samoan Nurses

The annual report of the surgeon-general of the United States navy for 1916 contains the following: "The first class of Samoan nurses was graduated this spring, and the exercises were made as interesting and attractive as was possible. The nurses were given diplomas signed by the commandant and governor of Samoa, and they were also given gold pins of appropriate design, on which were engraved the names of the nurses and the date of their graduation. These nurses are now detailed to visiting nursing work in the various outlying districts. At stated intervals they return to the native hospital for review and further instruction. The success of this work in Samoa is demonstrated by the increase in the present class and the number who are now applying for admission in the class of 1918."

The MODERN HOSPITAL

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Contributors, subscribers, and readers will find important information on advertising page 34.

Old Buildings for Hospital Purposes

This is not a brief for old buildings, and it seems to us that when the purpose for which a building was originally designed no longer exists, that building ought to be torn down and make way for a modern structure.

But this is a critical time. It is an era of hospitalization of the people, and the day is rapidly approaching when every sick man, woman, and child will demand a bed in a good hospital when sickness comes; and when that day comes, the rich and the poor must share alike in the beneficences that the hospital affords—if not in the luxuries, at least in the scientific necessities of sickness.

Approximately 12 percent of the sick people in this country who are ill enough to need a doctor are cared for in the hospitals, and about 88 percent in their homes. If this means anything, it means that the number of hospital beds in this country must grow amazingly in the next few years—not all at once, but in step with the education of the public to demand hospital care.

But hospitals cost money, and already we are building annually approximately $300,000,000 worth of hospital buildings, and we are spending almost an equal sum for the maintenance of hospitals.

If these are the facts—and they are—then we must think about some radical economics in our hospital service. These things will take care of themselves in large, wealthy communities, but out in rural districts and small towns, where there are not individuals of great wealth, but where all the people are in moderate circumstances and able to pay their way, it is going to be necessary to afford hospital service at a minimum cost. Very many of these communities are finding the money to build small, unpretentious modern buildings; but there are many communities that are not so situated, but where a few thousand dollars could be got together if the people could be shown that for so small an amount they could have a decent hospital. In many of these communities there is a large, well-built residence that has served its purpose as such, and is now ready either for wrecking or for any other use to which it can be put. Many of these residences are thoroughly well built, and quite a few of them have such interior arrangements that they could be transformed for hospital use for an extremely modest sum.

Fire protection is one of the very important factors in considering such a building for hospital purposes, but it is not the only factor, and with our modern methods, by way of outside fire stairs, interior chemical apparatus to put out fires in their inception, and by proper fire drill, we can go far toward eliminating fire risks in a one- or two-story dwelling house.

More of these abandoned residences ought to be pressed into service for hospital purposes in small communities. One such hospital in a town is worth more to that community, if properly administered, than dozens of finer hospitals that must be reached by railroad travel of fifty or a hundred miles.

Advertising a Hospital

There is a certain large municipal hospital in this country which, up to two or three years ago, occupied a position in its community that was highly equivocal, to draw the statement mildly. There were frequent eruptions and revolts, and every little while the newspapers of the city would come out with "scare-head" articles about something that had happened to a patient in the hospital; and it seemed to be tacitly understood that in every case where complaint was made by a patient or a citizen, the head of the hospital was automatically held to blame. Presently there came an epidemic in the hospital, due to cross-infection, in which one patient died, whose family created no end of a row. The newspapers took up the matter and really forced an investigation by the board of charity commissioners of the city. Not knowing

how to conduct such an investigation, the board called in a practical hospital man who had been "through the mill," and by his advice the investigation was made a very thorough one.

The investigation revealed two important things: first, that a mistaken policy of economy on the part of the board had deprived the superintendent of a trained assistant, and the superintendent had therefore been compelled to do an immense amount of detail work, which gave him little or no time to think about or transact the larger business of the hospital; second, that the newspapers had not been taken into the confidence of either the hospital board or the superintendent, and, as usually happens, insignificant incidents that came to the newspapers were magnified into heinous crimes.

At the end of the investigation, and at the instance of the board's consultant, an assistant superintendent was appointed who relieved the head of the hospital of all details and gave him plenty of time to look after broader policies and large principles of administration; and a new policy was initiated by which the newspapers were invited to participate in the management of the hospital to the extent at least of knowing all that transpired within its walls, and with a tacit understanding with the newspapers that, while the hospital was entirely prepared to give any information at any time, it would be expected that the newspapers, in their turn, would observe the proprieties by withholding from publication anything that might be inimical to the best good of the institution or of its patients.

From that time until now that institution has grown in popular favor, and is today perhaps the most popular municipal institution in this country. But the compact with the newspapers went farther than merely to give them information; it carried with it a tacit understanding that from time to time the superintendent of the hospital would give out for publication news of a general character in which the community would be kept thoroughly posted as to the character, amount, and scope of work that the institution was doing for the community.

This editorial is prompted by the fact that there lies on the editor's desk a three-column "scarehead" newspaper story, clipped from the leading paper in that city, telling some of the wonders of the city hospital and about some of the humanitarian work that is performed there. Many details are given, personal instances are cited, and the article, excellently written from a journalistic standpoint, touches the human side in every sentence and would likely touch the sensitive spot in the heart of "old Scrooge" himself.

Such articles have been published at frequent intervals during the last two or three years; they have won for the hospital a popularity that has resulted in far larger appropriations at the hands of the city fathers, and these in turn have resulted in far better work, a higher order of service to the sick, and a better hospital in every way, and its value to the community has been increased many fold.

This by way of suggestion for other hospitals that seem to get along badly with the communities which they serve.

The Medical Staff in a Small Hospital

One of the insistent problems in the hospital world of today is that of medical staff organization. It is a problem the solution of which means good or bad hospital service; it is a difficult problem because conditions are so different in different hospitals.

Nearly all members of the medical profession believe, in an abstract way, that a closed staff hospital, either for a large or small institution, is the best form of organization, for the reason that, where the staff is a closed one, responsibility for medical and surgical service can be fixed, and hence the character of work done in the institution is likely to be bettered.

Hospitals agree that a closed staff organization is the best, other things being equal, but very many hospital superintendents insist that other things are not equal. They insist, for instance, that men who form their medical staffs are very many times not the men in the community who have the large practices or who do the best work, and these superintendents say that with a closed staff, and with all other physicians in the community shut out of the hospital, even in connection with private patients, they must lose a large share of the income on which they must depend for their support.

Advocates of the closed staff insist, of course, that the best men in the community must be appointed on these staffs, and that, with the hospital's support and with the exclusion of other medical men in the community, the hospital's chosen staff can soon control most of the medical work of the community. While this is true in a large measure, it is also true that hospital boards cannot be depended on to appoint the best medical men in the profession in their communities to staff membership, and that the appointments are too frequently the result of personal friendships or for financial reasons, or for other unworthy motives.

THE MODERN HOSPITAL has been frequently asked for its advice as to the creation of a medical

staff in the small community hospital. Inquirers have suggested the impracticability of leaving the matter to the board of trustees entirely, and the like impracticability of intrusting the appointments to their medical men.

In a good many of these small hospitals excellent staffs have been created by action of the board of trustees and some of the medical men acting jointly. In one small hospital that the writer knows about three of the foremost medical men of the community were chosen as an advisory committee to the board of trustees, with the announced intention on the part of the board to exclude from the hospital a number of medical men in the community whose presence in the hospital was not desired. The result of the advice of these men has been that that hospital now has a far better group of medical men practicing within its walls. It seems to us that this is an excellent beginning, and that a fine closed staff for that hospital could be formed by the joint action of this same advisory committee of medical men and the hospital board. The board might proceed to nominate a sufficient number of medical men to do the work in the institution, and these nominations could be sent to the advisory medical committee for their action. If these medical men found any fault with any members chosen by the board, they would be required to give their reasons for the rejection of the individuals and to suggest substitutes. With these reasons before them, the members of the board could judge for themselves whether the advisory committee of doctors were playing medical politics or were not basing their judgments on principles that would inure to the best interests of the hospital. If the board found, for instance, that any objections were due to personal grievances or jealousies, they would know that these reasons ought not to be recognized; but it seems to us that with a matter of that sort put squarely up to a committee of local doctors, and with the understanding that their actions were to become public knowledge, they would, in a vast majority of cases, do what they thought was best for the institution.

We do not think very much of the contention on the part of hospital superintendents that any staff that might be named for their institutions would not bring in enough private patients to furnish support for the hospital; that is a short-sighted policy and one that would work out disadvantageously to the hospital for only a very short time, because with a good staff and with good administration the hospital would soon acquire such a reputation that it and its doctors would benefit sufficiently to overcome any loss by any outside physician not desired on the staff.

NAVY'S FIRST COMPLETE HOSPITAL SHIP

Congress Authorizes Building of Special Vessel From the Keel Up—Out-Patient Service Included

The annual report of the surgeon-general of the United States navy for 1916 contains the following regarding the building of a hospital ship: "Congress has authorized in the appropriation bill the first hospital ship to be built as such from the keel up by this or any nation. Plans for this ship, based on long experience with converted hospital ships and the experience of the European war, have been prepared by the Bureau of Construction and Repair in collaboration with the Bureau of Medicine and Surgery. The ship will be an oil burner, designed for a capacity of something over 300 patients in peace time, with a war capacity of over 500. The design incorporates the most advanced features of ship construction, including stabilizers, vacuum cleaning installation, etc. The hospital department will, in addition to its medical, surgical, and contagious disease divisions, include an up-to-date out-patient department for special examination and treatment of men in the fleet requiring special and temporary services. She will also carry in her hold regimental and field hospital medical equipment, including ambulances and other sanitary paraphernalia. When finally completed, it is believed she will represent a model ship of this class for many years to come, and her usefulness may well be expected to continue during the lifetime of those who had a hand in her designing."

On Baby Culture

Some strange admonitions on the care of the baby have been gleaned by a Red Cross visiting nurse from a number of essays by school children in a country town, says the *American Red Cross Magazine*. Sound advice is mixed with bizare reasoning. Quotations from the essays follow:

"Don't let the baby suck its thumb, for there might be a fly on it and it would get the disease of the fly."

"Don't rock the baby, as it will toss its brains."

"If a baby gets beer every day, it won't grow very large and it won't be good in school."

"Rocking is not good for it; it makes them sick and stiff."

"Bad habits are easily made by the mothers, and the babies get wise to it."

"If you give the baby alcohol, he will lose one-half pound every year and will become drunk when he is old."

"Never lift it up by the arms, because it will place them out of place. Never, never, never pick up the baby by the arms whatever."

"The public owes the baby as follows: Pure air and sunshine; pure, cool, fresh, free-flowing air at night; its own private, sufficient covering of fluffy, porous materials, and the chance to be a perfect man or woman."

The Westboro State Hospital, Westboro, Mass., celebrated on December 7 the thirtieth anniversary of its opening. Among those who made addresses was Dr. N. Emmons Paine, of West Newton, first superintendent of the institution and present chairman of the board of trustees. Other speakers were Dr. L. Amos Givens, first appointee as assistant physician; Dr. L. A. Dewey, of the State Commission on Mental Diseases; Dr. H. I. Klopf, of Allentown, Pa.; Dr. John L. Coffin, a former trustee; Dr. John P. Sutherland, of the Boston University Medical School; Miss Eliza T. Durfee, former trustee; and Superintendent Dr. Harry O. Spalding.

HOSPITAL, MEDICAL, AND SPECIAL MEETINGS

AMERICAN HOSPITAL ASSOCIATION

* * *

Official Bulletin for January—Issued by the Officers of the Association

The first meeting of the officers and trustees of the American Hospital Association was held at the Willard Parker Hospital, New York city, Saturday, November 25, Dr. Robert J. Wilson presiding.

LIFE MEMBERSHIP CERTIFICATE

As a number of applications have been received for life membership, it was decided to formulate an engraved certificate for presentation to each life member on the acceptance of application. The form of certificate was discussed and the secretary instructed to order the number required.

TRANSACTIONS

The desirability of the publication of the proceedings of the association in buckram binding was freely discussed; but, on account of the uncertainty of the amount of funds available, it was decided to postpone action on this matter until the next meeting of the trustees. The secretary was, however, authorized to contract for the printing, selecting the lowest responsible bidder. It was adopted that the price of $1.50 be printed upon the back of the finished volumes. The secretary was instructed to obtain, wherever possible, the cost price for copies of the transactions sent to others than members of the association or to organizations of similar nature to our own that exchange publications.

OFFICIAL PRINTED FORMS

Various changes were authorized in the printed forms used by the association. The standard letterhead was approved, upon which will be printed the name of the association, the names of the president, secretary, and treasurer, and the address of the headquarters, which will be that of the office of the secretary. The form of the application blank was also changed to more nearly comply with the requirements.

BUSINESS PROCEDURE

The present method of conducting the business of the association with respect to the handling of applications for membership was discussed with the object of simplifying the methods, relieving the unsalaried treasurer from some of the burdensome routine work now performed by him, and, if possible, of increasing the efficiency of the work. It was the opinion of those present that as much of the business as possible should be transferred to the paid secretary's office, and that the duties of the treasurer be changed to those of custodian of the funds and controller. In order to effect these changes, the following was adopted:

"That, subject to the approval of the treasurer, the secretary be authorized to receive all applications for membership and payment for dues, and to cause notices of arrears to be issued, and that, as agent for the treasurer and subject to his approval, the secretary be authorized to pay all accounts and to render a statement of his receipts and expenditures to the treasurer in such form as the treasurer may require."

COMMITTEE ON HEALTH INSURANCE

A special committee on health insurance was discussed, and it was suggested that, when appointed, this committee should cooperate with a similar committee of the American Nurses' Association and with any other organization that might be interested in the subject. This committee will have a big problem to consider, since legislation on this subject is proposed in many states. Health insurance involves a reconsideration of many hospital customs and practices of great antiquity, as, for instance, the treatment of patients in the dispensary either free of charge or for a nominal sum. It is expected that this committee will not only advise the hospitals as to the best way of adapting themselves to the new order of things, but that it will point out the phases of the new legislation that will, if not carefully studied, adversely affect our institutions. Too often we have sat supinely by while legislation has been enacted that gave little or no consideration to the interests of those most concerned; but, from hints as to the makeup of this committee, assurances may be given that the American Hospital Association will receive a report on this important subject that will serve as an intelligent guide for all hospitals in America.

CONFERENCE WITH THE AMERICAN COLLEGE OF SURGEONS

The committee of three to confer with the American College of Surgeons, of which Ex-president Smith will be chairman, was discussed and arrangements made for an early meeting. Those who heard the able paper read by a representative of the American College of Surgeons will fully realize the extreme importance of this committee, and the very many real obstacles and difficulties that have hitherto confronted former committees of a similar nature in attempting to either classify or standardize hospitals. The deliberations of this conference committee will be of special importance, since they will express the opinion of two powerful groups, both working in harmony and coordination, and with a sufficient fund available for the necessary expense entailed.

COMMERCIAL EXHIBIT

The commercial exhibit was discussed, and it was definitely decided that this activity of the association should be entirely controlled by the trustees, under the management of the secretary. By relieving the local committee of the vast amount of specialized work and responsibility connected with this undertaking, that committee will be enabled to concentrate on the many important details connected with the reception of a large organization.

FISCAL YEAR

The present custom of collecting dues for parts of two years was discussed, and the disadvantage of this method was considered. The secretary and treasurer were instructed to consider the prospect of a change, so that dues might be paid for a period of one year from January 1 rather than the period between conventions, and to report on its feasibility, with recommendations, at the next meeting of the trustees. At the present time much confusion exists as to just when dues are payable, and, while many members meet this obligation at the time of the convention, others await the receipt of a bill. It was thought advisable to readjust this matter, so that our practices would

more nearly coincide with those generally adopted by other organizations.

BULLETINS OF THE ASSOCIATION

The publication of bulletins of the association was considered a step in the right direction, and the secretary was authorized to make such arrangements for the publication of association news in THE MODERN HOSPITAL, or other suitable publication, as will assure the widest publicity to our activities. It was further expressly provided that such news items should not be denied any reputable publication seeking them.

INFORMATION AND REGISTRATION BUREAU

The secretary was empowered to conduct, as far as possible, the bureau of registration and for the exchange of information. He was further authorized to register the names of applicants for positions in hospitals, opportunities for hospital employment, and answer inquiries relating thereto, providing that the association shall not indorse or be in any way responsible for the character or qualifications of applicants or the standard of the hospital seeking such service. It is the earnest hope of the trustees that this project shall be undertaken under the most favorable circumstances, and for this reason it is expressly stipulated that, for the present at least, the association shall simply undertake the registration and exchange of information, and the registration of the names of those seeking either a position or a suitable candidate to fill a vacancy. As this bureau grows, it is likely that greater responsibility will be assumed, and that it will expand to the proportions contemplated in various committee reports submitted to the association; its growth, however, depends on the cooperation and assistance forthcoming from the members of the association, for whose benefit and assistance the enterprise has been inaugurated.

APPOINTMENT OF SECRETARY

The trustees decided that it was both advisable and practicable to appoint a salaried secretary, although this step was considered in the nature of an experiment, subject to reconsideration if the finances of the association would not permit its continuation. After the presentation of the qualifications of Dr. Wm. H. Walsh, of Philadelphia, his nomination was favorably considered, and he was duly appointed to the position for one year.

HEADQUARTERS

The secretary was authorized to establish an office, where the permanent headquarters of the association shall be located, whence all the business of the organization shall be conducted.

MATTER OF MEMBERSHIP

"Are you a member of the American Hospital Association?" If you are a member, this is a question you should ask every other hospital official whom you meet. If you are not a member, we would like to know why? Perhaps someone remains outside the fold because he or she does not realize the advantages of membership. If so, an inquiry addressed to the secretary will bring you a statement in detail and some information about the organization. It is becoming increasingly difficult to find a progressive hospital worker whose name is not already on our lists, and the membership roll of the American Hospital Association records the names of almost every prominent hospital executive in the United States and Canada.

Autopsies—Their Value, Methods of Obtaining, and Protection of the Hospital[1]

BY M. C. WINTERNITZ, Associate Professor of Pathology, Johns Hopkins University.

The most convincing evidence of the importance of post-mortem examination may be found in the history of medicine. Through many centuries pathological anatomy, the basis of physical diagnosis and scientific therapy, became established by the systematic performance of autopsies.

The overthrow of the empirical medicine of the ancients came with the dissection and the study of the more intimate anatomical structures of the human body nearly 2,000 years after the establishment of scientific medicine by Hippocrates (460-377[?]B. C.).

In the writings of Vesalius (1414-1465), followed by those of Fallopius (1523-1562), Eustachius (1520-1574), and many others, many observations of morbid anatomical structure may be found. Beneviene (1440-1524), the pioneer in pathological anatomy, as well as his successor, Théophile Bonet (1620-1689), confined his attention mainly to a collection and description of monstrosities and curiosities.

Morgagni (1682-1771) was really the first to grasp the significance of pathological anatomy. He correlated the changes in the body found after death with the symptoms of disease, and incorporated his studies in a volume entitled, "De Sedibus et causis morborum per anatomen indagatis." His work was objective, based on personal observation at the post-mortem table, and marks one of the great epochs in medicine. Matthew Bailie (1761-1823) followed Morgagni closely with book and atlas.

Then came Bichat (1771-1802). He emphasized tissues, not organs, as the seat of disease—histology without the microscope. His views were based on sound observation, and had an important bearing on that most brilliant period of French medicine, the first thirty years of the nineteenth century, illuminated by the work of Corvisart (1755-1821) and Laennec (1781-1826). Through him they saw in pathological anatomy the foundation of physical diagnosis. Their work bore fruit immediately in England, where Bright (1789-1858), Hodgkins (1798-1866), and Addison (1793-1860) correlated the clinical and anatomical pictures of their cases as indicated in part by the diseases which bear their names. Likewise in Vienna the cooperation between Rokitansky (1804-1878), whose knowledge of pathological anatomy has probably never been equaled, and the clinician, Scoda (1805-1881), created a school of medicine which became famous throughout the world as the best opportunity to study the relation of symptoms to the organic changes in the body. This was a period of exaggeration for pathological anatomy. So much emphasis was laid on the anatomical changes in the organs and tissues, and these seemed so irreparable, that therapeutic nihilism was a natural consequence. This, in its turn, led to the rational therapy of today.

Rokitansky had laid the cornerstone of modern general pathology, and particularly of pathological histology. It remained for Virchow (1821-1902) to establish cellular pathology. This is his great monument. His influence on the progress of medicine cannot be overemphasized. He eliminated speculation, and recognized only actual deductions based on observation. He emphasized much more strongly than any of his predecessors the importance of objective knowledge in pathological conceptions. He taught that every physiological process possesses an anatomical corollary, and that disease consequently finds ex-

[1]Read before the eighteenth annual conference of the American Hospital Association, Philadelphia, September 26-29, 1916.

pression in anatomically visible change. Cohnheim (1839-1884), Virchow's pupil, concentrated on the field established by John Hunter (1728-1793)—namely, experimental pathology, which has won such an important position in the progress of medicine.

During the present generation medicine has advanced very rapidly. Through bacteriology the direct cause and prevention of many diseases have been determined. The application of new methods, largely derived from progress in other purer sciences, physics and chemistry especially, have also played an important role. These have led so rapidly to the creation of new phases of medicine that for the moment, perhaps, it is necessary to stop and consider the role of the autopsy in the medicine of today.

The autopsy furnishes the only means of teaching the student pathological anatomy; it controls clinical diagnosis and therapy; it is the only reliable evidence on which vital statistics may be based, and it is a constant source of problems necessary for the advancement of medicine. Naturally, therefore, the greatest benefit is derived from the autopsy in an institution where teaching is combined with clinical and research facilities. The realization of this has made pathology the most important link between the hospital and the medical school. The more intimate this affiliation, the closer the proximity of the two institutions, the greater are the mutual advantages.

The autopsies from the hospital are essential for the teaching of the medical student. Only under exceptional circumstances is it possible for the hospital to have the laboratory facilities and the large and efficient staff which affiliation with a teaching institution offers. The pathologists of such an institution not only constantly augment their knowledge by the correlation of the clinical and anatomical findings with physicians of the hospital, but the oft-repeated review necessitated in the teaching of the elementary aspects of the subject frequently opens new avenues of approach to unsolved problems.

A department of pathology as outlined above not only furnishes teaching facilities, but is a means of deriving great benefit from the autopsy and its subsequent study. Briefly, it must have facilities for the post-mortem examination, equipment for the histological examination of the tissues, including the more specialized types of apparatus required for neurological and other more or less specific branches of clinical pathology; laboratories of experimental pathology, including bacteriology, physiology, chemistry, and, finally, a recording department where the completed files of the autopsy may be analyzed to the best advantage. This is only the shell; more important needs are men specially trained in these various branches to direct the work. The subject has outgrown the scope of the individual.

The student comes to such a pathological laboratory after he has dissected one-half of the human body. He has a practical knowledge of the skeletal system and, most valuable of all, if he has acquired it, independence of thought and work. His knowledge of gross anatomy is based on the limited dissection of the skeleton and the much more limited opportunity to study the viscera, and then only in embalmed bodies. His knowledge of histology is based on a few typical tissues, usually animal tissues, and, as a rule, he has little conception of gross and microscopic anatomical correlation.

The autopsy may be made to appeal strongly to the student. It deals with diseases in man, the subject he has elected as his life work, and brings him into much more intimate contact with clinical medicine. After he sees a large number of autopsies, he is able to recognize the physiological range of variation in organs and tissues, and then the more gross and characteristic anatomical manifestations of disease. This knowledge is not easily acquired, for he must first learn to look at things as they are, to see what they really show, and not as he has read they should be. In short, he must acquire the power to see things objectively. He can often make a diagnosis from a description similar to one which he remembers from a book, although the object or condition itself, when shown to him, will remain unrecognized. Familiarity with gross pathology can be acquired only at the autopsy table. Here, too, the student has the opportunity of correlating the gross and microscopic anatomical picture. He sees and makes sections of the gross tissues which he has studied. His opportunities do not stop here. He sees the lesions produced by bacteria in man which he has heretofore been able to study only in the test tube or, at most, by animal inoculation. He has the opportunity of studying these bacteria in smears, by cultivation, and by inoculation into animals. He studies the resultant lesions and finally recultivates the bacteria in many cases. In only this way can he be made to realize the importance of Koch's postulates in the etiology of disease. In this way, too, he learns the difference between the organism he has studied in his course in bacteriology, often attenuated by long artificial cultivation, and the virulent organism freshly removed from its parasitic existence. Likewise he has the opportunity of doing immuniological tests upon the tissues of the host and the parasite. But the student's opportunities do not even end then. He hears the results of chemical, physiological, and other studies carried out in the various laboratories of experimental pathology, and not infrequently the opportunity to share in a small part of a problem in such a laboratory stimulates him to psychic independence.

The advanced student and the clinician return to the post-mortem room with questions. They know the clinical history, and they are interested in the many problems the case presents. They acquire in this way an anatomical picture which they correlate with their clinical findings. The more autopsies the clinician has seen, the keener is his interest. He views future cases from the composite mental picture he has formed at the autopsy table, and modifies his diagnosis, prognosis, and treatment accordingly with scientific accuracy.

The complete study of an autopsy has become so complicated that the routine procedure alone requires days and even weeks. The advanced student and the clinician should know the result of these investigations, and for this purpose the modern clinical pathological conference serves admirably.

There are two types of conference. The older, used essentially to compare briefly the anatomical and clinical aspects of cases for medical students, a teaching conference, where, as a rule, it is impossible to enter in detail into the more obscure aspects of the case. The modern autopsy demands a more advanced type of conference, where, after a brief presentation of the clinical aspects, together with charts, x-ray plates, etc., the anatomical demonstration of the organs is supplemented by gross and microscopic pictures of the important lesions of the case, and by reports from the bacteriologist, chemist, and others engaged in the unraveling of the various problems that have presented themselves. This is all done very briefly, and is followed by a discussion in which many of the faculty, which should be well represented, join. Such conferences give a new impulse to research, and many interesting problems have evolved through them from the autopsy.

The proper recording and filing of the autopsy protocols make them one of the hospital's most valuable assets. The protocol should be an objective description of the autopsy, made during its procedure. It should be supplemented by a synopsis of the clinical history and by the objective description of microscopic sections, primarily of tissues, the seat of gross lesions, but also from all other important organs of the body. The results of special investigation in the various units of the laboratory of experimental pathology should likewise be recorded with the case. Photographic illustrations of gross and microscopic lesions add greatly to the clearness of the description. The anatomical diagnosis should not be written until a complete study of the case has been made. A provisional anatomical diagnosis may be made at the time of autopsy for the convenience of the members of the staff of pathology as well as for the clinician, but it is evident that, since the ideal anatomical diagnosis is the sequential statement, not only of the anatomical changes, but also of the results of laboratory study in relation to immediate and ultimate cause of death (as well as a tabulation of subsidiary findings), it cannot be completed until all the evidence is at hand.

Records completed in this way can be made of the greatest value. They not only furnish an ever-increasing basis for research in specific diseases, but on their analysis the inaccurate vital statistics of today will ultimately be corrected.

In the evolution of man new medical problems will constantly present themselves, and in their study the role played by the autopsy in the successful combat of similar problems of the past will repeat itself. The most accurate knowledge we have of the scourge of the present day, infantile paralysis, is its pathological anatomy. Without the autopsy the diagnosis even of this disease often cannot be attained. From the anatomical picture the clinical manifestations of the disease are readily understood and its successful transmission to animals has been verified. Its histology, comparable to that of other infectious diseases, will aid in establishing its etiology and ultimately may help in unraveling its portal of entry and dissemination in the body.

This brief review has been made in an attempt to emphasize the importance of the autopsy for the progress of medicine. The knowledge gained through the post-mortem examinations of the past is permanent. The problems still to be solved are very numerous, and in these not only must the autopsy play its role, but it must be performed in ever-increasing numbers for its value in fundamental medical education. The student must learn pathological anatomy. The physicians who have been taught to think anatomically must be given opportunity to enlarge their experience. The community must have accurate vital statistics. It is not sufficient that post-mortems are carried on in large numbers in Europe—they must be performed in every country, in every community, if the health of the public is to be safeguarded.

There is, unfortunately, a great discrepancy between the number and percentage of autopsies in the larger European hospitals and those of the United States. This has been emphasized recently in the report of the Committee of the New York Academy of Medicine.[1] To facilitate comparison, the figures in their tables have been calculated for a period of three years and are presented in table I.

TABLE I.

Number of autopsies		Canada		England		Germany		Austria[1]		United States	
(A) Total	(B) Percent	A	B	A	B	A	B	A	B	A	B
1–25	1–10	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
25–50	10–20	.....	.....	.....	.....	.....	.....	.....	.....	.....	5
50–100	20–30	.....	1	.....	.....	.....	.....	.....	.....	2	4
100–250	30–40	1	.....	.....	.....	.....	.....	.....	.....	5	1
250–500	40–50	.....	.....	.....	.....	.....	.....	.....	.....	5	1
500–1,000	50–60	2	.....	1	1	2	.....	.....	.....	5	.....
1,000–1,500	60–70	.....	1	2	.....	.....	.....	.....	.....	.....	1
1,500–2,000	70–80	.....	.....	2	2	.....	.....	.....	.....	.....	.....
2,000–3,000	80–90	1	.....	.....	2	.....	3	.....	.....	.....	.....
3,000	90–100	.....	.....	1	.....	4	3	1	1	.....	.....

[1]The combined statistics of eight Austrian hospitals have been omitted. The numerals in the various columns A and B represent the number of institutions in the countries indicated that have a total number of autopsies (A) and a percentage ratio of autopsies to deaths (B) to correspond with the respective figures on the left of the chart.

This table shows not only how few autopsies are performed in a number of representative hospitals of the United States compared with those of the other countries, but it suggests that there may be an almost proportionate variation between number and percentage. Further analysis of the individual hospitals in this country shows that such relationship does not hold.

TABLE II.

Hospital	Autopsies Total number	Percent
1	61	39.6
2	76	10.
3	104	16.8
4	117	13.1
5	120	17.2
6	158	7.3
7	167	26.9
8	281	24.5
9	284	29.6
10	313	23.
11	346	62.6
12	408	9.2
13	670	45.1
14	779	7.5
15	813	13.7
16	927	14.3
17	998	10.

Recently published data from several hospitals in the United States show a marked improvement in the ratio of autopsies to deaths. The director of the Pathologic Institute of the Cincinnati General Hospital, Dr. Paul G. Wooley, reports that between June 1 and December 31, 1915, 293 necropsies were held from a total of 465 cases, a percentage of 63[2]. Since the Robert Bent Brigham Hospital, Boston, opened on April 1, 1914, complete autopsies have been carried out on 70 percent of all those dying (35 autopsies in 50 deaths),[3] and at the Mayo clinic during the triennial period, 1910-1912, in 626 deaths, 512 necropsies

[1]Report on Post-mortem Examinations in the United States by Public Health, Hospital, and Budget Committee of the New York Academy of Medicine; Jour. Am. Med. Assn., 1913, vol. LX, No. 23, p. 1784.

[2]More Good Autopsy Figures; THE MODERN HOSPITAL, 1916, vol. VI, p. 376.

[3]Recent Necropsy Records in the United States; Jour. Am. Med. Assn., 1916, vol. LXVI, pp. 1706-1707.

TABLE III

Hospital	Number of deaths	Percent of autopsies	Requests for autopsy		Signature required
			Percent	By whom	
Mayo Clinic	1910, 198 1911, 200 1912, 227 1913, 269 1914, 293 1915, 338	81. 86. 86. 84. 88. 95.	100	Pathologist	Person who obtains permission
Pennsylvania	1910, 349 1911, 328 1912, 303 1913, 339 1914, 379 1915, 286	33.8 27.3 27.5 36.4 35.5 40.	90+	Physician	Verbal consent
Presbyterian	1910, 433 1911, 398 1912, 323 1913, 286 1914, 306 1915, 278	28.9 20.4 25.1 29.3 35.6 40.	100	Physician	Relatives, hospital superintendent, obtainer
Worcester City	1910, 407 1911, 381 1912, 423 1913, 473 1914, 473 1915, 538	9.8 4.9 9.2 7.8 7.4 4.4	50	Physician	Relatives
Montefiore	1910, 105 1911, 124 1912, 106 1913, 104 1914, 197 1915, 228	26.07	50	Hospital superintendent	Witnessed by two relatives
Cincinnati General	1910, 223 1911, 93 1912, 95 1913, 70 1914, 71 1915, 369	? ? ? ? ? ?	100	Physician, hospital superintendent, undertaker	Relatives, hospital superintendent
Michael Reese	1910, ? 1911, ? 1912, ? 1913, ? 1914, ? 1915, ?	? ? ? ? ? ?	?	Physician	Relatives, hospital superintendent, obtainer
Lakeside	1910, ? 1911, 232 1912, 213 1913, 148 1914, 222 1915, 243	? 40. 40. 43. 38. 44.	100—	Physician	Relatives, hospital superintendent, obtainer
Grace	1910, ? 1911, ? 1912, ? 1913, ? 1914, ? 1915, 317	? ? ? ? ? 9.1	25	Physician	Relatives, obtainer
Boston City	1910, 1,663 1911, 1,833 1912, 1,834 1913, 1,891 1914, 1,827 1915, 1,932	10.2 6.1 5.5 5.3 6.8 8.8	65	Physician	Relatives, obtainer
University Philadelphia	1910, 303 1911, 271 1912, 249 1913, 308 1914, 290 1915, 310	14. 12. 18. 14. 17. 20.	50	Physician	Relatives, obtainer
Buffalo General	1910, 280 1911, 340 1912, 344 1913, 355 1914, 360 1915, 368	13. 11.+ 12.+ 12. 13. 11.	50	Physician	Relatives, hospital superintendent
New York	1910, 690 1911, 708 1912, 663 1913, 606 1914, 592 1915, 562	22.89 23.44 28.05 26.07 22.12 27.4	100	Physician	Relatives, hospital superintendent, obtainer
New Haven	1910, 254 1911, 235 1912, 268 1913, 307 1914, 332 1915, 299	15. 8. 9. 9.+ 9. 10.	?	Physician	Relatives
Cleveland City	1910, ? 1911, ? 1912, 644 1913, 842 1914, 755 1915, 845	? ? 18.3 16.7 21.9 23.4	50	Physician	Relatives, hospital superintendent, obtainer
Mt. Sinai	1910, 646 1911, 719 1912, 738 1913, 705 1914, 607 1915, 750	23. 21. 20. 10. 12. 14.	?	Physician, hospital superintendent	Relatives, hospital superintendent, obtainer

TABLE III. (Continued from page 39.)

Hospital	Number of deaths	Percent of autopsies	Requests for autopsy		Signature required
			Percent	By whom	
University of California.....	1910, 66 1911, 51 1912, 43 1913, 80 1914, 101 1915, 112	20. 41. 58. 52.5 59.4 73.2	50	Physician.....	Relatives, hospital superintendent
Massachusetts General.....	1910, 450 1911, 475 1912, 470 1913, 428 1914, 426 1915, 405	56.+ 45.— 34.+ 34.+ 27.+ 28.—	100	Physician.....	Relatives, hospital superintendent, obtainer
Barnes.....	1910, ? 1911, ? 1912, ? 1913, ? 1914, 2 1915, 98	? ? ? ? 50. 50.6	100	Physician.....	Relatives, hospital superintendent
St. Louis Children's.....	1910, ? 1911, ? 1912, ? 1913, ? 1914, 8 1915, 145	? ? ? ? 50. 75.	100	Physician.....	Relatives, hospital superintendent
Bellevue.....	1910, ? 1911, ? 1912, ? 1913, ? 1914, ? 1915, ?	10.	?	Physician.....	Relatives, hospital superintendent, obtainer

were made, or 81.8 percent; in 1913 there were 269 deaths and 227 necropsies, or 84.4 percent; in 1914, 293 deaths and 258 necropsies, or 88 percent, while to date (March 17, 1915) there have been 73 deaths with 73 necropsies, or 100 percent.[1]

These percentages, unequaled by any other institution in the United States and by few abroad, as well as by our own experience at the Johns Hopkins Hospital and the city hospitals at Bay View, Baltimore, have led to the belief that an inquiry into the method of obtaining autopsies, the use made of the autopsy material, etc., from a group of large institutions, might be of interest. A circular letter was therefore sent to the superintendents or the pathologists of a number of hospitals in the United States. Twenty responses were received.[2] The results of this investigation are, in part, tabulated in tables III and IV.

In nineteen of the twenty-one hospitals included in the investigation, there has been no notable change in either the total number or percentage of autopsies during the past six years.

If, however, the ratio of autopsies to the number of deaths for any year—say, 1915—be compared with similar data (column B, table I) from the report of the Committee of the New York Academy of Medicine, the result is very surprising, especially if the twenty-one hospitals included in this investigation are supplemented by the Robert Bent Brigham Hospital, Boston, the Johns Hopkins Hospital, and city hospitals, Bay View, Baltimore, for the same year.

TABLE IV.

Column B Invest'n of Com. N. Y. A. M.	Percent of autopsies	Column A Present invest'n
5	1–10	5
5	10–20	3
4	20–30	4
1	30–40	2
1	40–50	2+1=2[3]
..	50–60	1
1	60–70	0+2=2+[4] [5]
..	70–80	2
..	80–90	1
..	90–100	0

[1]Wilson, L. B., The Necropsy as a Public Service; Jour. Am. Med. Assn., 1915, vol. LXIV, No. 19, p. 1560.

[2]I wish to take this opportunity of thanking the superintendents and pathologists of these institutions for their kind cooperation.

[3]City Hospital, Bay View, Baltimore, 45.4 percent for 1915.

[4]Johns Hopkins Hospital. 1915, 65 percent.

[5]Robert Bent Brigham Hospital for 1914, calculated as 63 percent.

The comparison in table IV is encouraging, more so perhaps since eleven of the hospitals included in column B of this table (present investigation) are also included in column A (Report of the Committee of the New York Academy of Medicine). While there are still a large number of hospitals with a small percentage of autopsies, and many of these have a large number of deaths, nevertheless it is evident that there is an increasing group of institutions where the percentage of autopsies is high. Perhaps the selection of hospitals was fortuitous, and it is probable further investigation of many more institutions would yield a still different result.

REQUESTS FOR AUTOPSIES

It is very surprising, indeed, that in such splendid hospitals as are represented in the present investigation an attempt is not made to obtain an autopsy for every death. This, unfortunately, is not the case for the majority. Only nine of the twenty hospitals request permission in 100 percent of the fatal cases, one in 90 percent, and seven in from 25 to 65 percent. The remaining four gave no definite information on this point.

It may be said with certainty that as yet the people of the United States have not reached that stage of evolution when they will request the institute to perform autopsies.

Permission for the performance of the autopsy is requested by a number of different people. For convenience, these may be grouped under physician and hospital superintendent. Physician includes intern, resident and attending, hospital superintendent, assistant, and lay clerks. The physician requests permission for the autopsy in twelve, the hospital superintendent in two, both physician and hospital superintendent in six, and in only one case is the responsibility delegated to the pathologist alone. The physician succeeds in from 5 to 44 percent, the hospital superintendent in 28 to 75 percent, the physician and hospital superintendent in 4.4 to 23 percent, and the pathologist in 95 percent. It is dangerous to draw deduction from such an analysis as the above. It is not "who," but "how."

Dr. Summersgill, superintendent of the University of California Hospital, where they have been so successful in increasing the percentage of autopsies recently, was kind

enough to comment on the question: "I have observed many times that a clever lay clerk will secure more post-mortems than an ordinary medical man, as it is a natural tendency for so many unintelligent people to believe that a physician is hard-hearted and desires a post-mortem mainly to satisfy his curiosity, and for that reason I believe that a good lay clerk can secure better results with this class of people than a medical man."

In a recent publication,[1] Wilson emphasizes that one person only, the pathologist or his assistant, should be allowed to present the subject of necropsy to the relatives of the deceased. Although the senior fellow in pathology, who is delegated to this duty by Dr. Wilson, serves only six months, the fact that their necropsy service has not fallen below 80 percent in the last six years is sufficient evidence that success in obtaining permission for post-mortem examination is not entirely a matter of personality, but more largely one of "training in placing proper argument before the relatives."

Answer to the question, "what do you consider the most successful argument in obtaining autopsies," could hardly be made in detail in the brief space allotted to it in the circular letter. The information received, however, shows a certain uniformity of method. The stock arguments are (1) the importance of the autopsy in determining the true cause of death, (2) the benefit derived from this knowledge by the family, (3) by the hospital, (4) by the science of medicine and humanity, (5) the aid of the exact cause of death as revealed by the autopsy in the settlement of insurance claims.

The answers to several other questions may be summarized here, for they have a definite bearing on the two arguments which are most widely used in obtaining permission for autopsy.

In no instance does the hospital make any effort to inform the family of the result of the post-mortem examination. Many of them are willing to do so when requested, and many of them feel that it should be done only when necessary. The benefit, therefore, to the family can be only a remote one, and conditions frequently revealed by the autopsy, important for the immediate or future welfare of the family, remain unknown to them.

One of the ways in which autopsies may "help others" is through correct vital statistics. The answers to the query, "are health certificates completed in conformity with the anatomical findings," are difficult to understand. Three institutions gave an indefinite answer, such as "more or less," "when possible," and "fifty-fifty;" one in "cancer cases, otherwise not;" four answered "no," and the other remaining twelve said "yes." One of the latter, Bellevue Hospital, New York, has a special form for this purpose, which Dr. Norris was kind enough to inclose in his reply, with the following note:

"Owing to the difficulty and delay caused in sending the death certificate book to the pathological laboratory to fill in the autopsy findings, and because death certificates are given to the undertakers in order that they may obtain removal permits more promptly, the Department of Health has issued a blank entitled, 'Return of Autopsy Findings,' which I inclose. The anatomical diagnosis is filled out on this sheet."

The New York State Board of Health may be congratulated on this method, which is the only way in which vital statistics can be accurately compiled. It would be gratifying indeed if similar methods already had been adopted in all of the hospitals that answered the query in the affirmative. Unfortunately the information obtained in this investigation is not far-reaching enough to say this with certainty, and it is feared that it is not the case.

RETURN OF AUTOPSY FINDINGS

Date.....191..

To the Department of Health:

The results of the autopsy performed on the body of

.....

who died at.....

(Name of institution)

on.....are as follows:

(Date)

.....

.....

.....

.....

.....

Signature.....

Pathologist.

In Maryland, for instance, the death certificates must be completed before the burial permit is granted, and as a consequence it is usually filled out with the clinical diagnosis. In obscure cases, where the clinical diagnosis is not definite, the completion of the death certificate is delayed until the gross anatomical findings are known. Even with this knowledge, however, the anatomical diagnosis is incomplete in a large number of cases until histological, bacteriological, and other special investigations have been made. Consequently this information, invaluable in the compilation of vital statistics, is, at best, buried in the records of the hospital. Without more definite knowiedge, it may be assumed that the condition in the state of Maryland is not unique.

With the aid of the Prudential Life Insurance Company an investigation of the autopsy records, which includes a comparison of the clinical and anatomical diagnosis with the records of the State Board of Health—namely, the certified and classified cause of death—has been undertaken in Baltimore at the Johns Hopkins and city hospitals. The information derived from this study will undoubtedly assist in determining the accuracy of vital statistics.

It is evident from the following note kindly included in the answer of Dr. A. R. Warner, of Cleveland, that the undertaker may be of aid in obtaining autopsies. He says: "Recently I was at the Cincinnati Hospital, and I find that there is in use there a cooperation between the hospital and a school of embalming, whereby the school of embalming embalms, free of charge, all bodies autopsied. It is understood between this school and the city undertakers that this will be done in all autopsied cases, and the undertakers do not therefore object to autopsies. The embalming is done for them and well done, and they collect the usual fee. It is, therefore, for their interest to have autopsies, and the usual antagonism is entirely missing. This has been a great help to them in securing autopsies."

At the Johns Hopkins Hospital all autopsied bodies have been embalmed for the past three years, and it has had a similarly good effect in conciliating the undertaker to the delay the post-mortem frequently imposes. Occasionally, however, in the request for permission to perform the autopsy the fact that the body is embalmed by the hospital free of charge has been utilized with success as an argument. The possible conflict here should be avoided.

From the answers received it is apparently not of moment, as far as the success in obtaining post-mortem examination is concerned, whether the institution requires

[1] Wilson, L. B., The Necropsy as a Public Service; Jour. Am. Med. Assn., 1915, vol. LXIV, No. 19, p. 1560.

the signature of the nearest relative, the hospital superintendent, or the individual who obtains permission. The Mayo clinic, for instance, with the highest percentage of autopsies, requires only the signature of the person who obtains permission, while at the University of California, where the percentage of autopsies has increased from 20 to 73 in the past six years, the signature of the nearest relative and that of the hospital superintendent are both required. Undoubtedly the latter method will insure a maximal protection to the institution. On the other hand, despite the result of the present investigation, it is generally assumed that the necessity of obtaining the signature of a relative, particularly from the more ignorant, may result in failure, when a verbal consent for necropsy would be granted. Such a signature, if not absolutely necessary for the protection of the hospital, should be eliminated.

The experience of the past few years at the department of pathology of the city hospitals, Bay View, Baltimore, may be of interest. At Bay View the municipal alms house and the hospital are closely affiliated and are under the direction of the same superintendent. In 1912 the work in pathology was reorganized. With a small expenditure of money the facilities for post-mortem examinations were made attractive, and a laboratory for histological, bacteriological, and chemical studies was equipped. A resident was appointed, and under his direction the interns of the various clinical branches performed the autopsies during a part of their service. The autopsies were carefully studied and recorded. A weekly clinical pathological conference was inaugurated, and the material from the autopsies further utilized for the teaching of gross morbid anatomy to the students of two of the medical schools of the city.

Before 1912 the post-mortems were performed at the city hospitals by the resident pathologist of the Johns Hopkins Hospital or one of his assistants. He had to carry with him the autopsy kit, and he brought back such material as he was personally interested in, or that he felt was essential for his course in gross morbid anatomy. He rarely knew anything of the clinical aspects of the case, and the only record of the autopsy was a hasty anatomical diagnosis based on the gross findings alone. The result of the reorganization was very gratifying. The autopsies increased in total number from 75 to 297, and in percentage from 12.3 to 60. A friendly rivalry sprang up among the interns and the residents of the various clinical branches to obtain autopsies. Recent graduates were attracted by the possibility of supplementing their clinical work with the experience in pathology, and made the problem of securing competent interns less difficult. Several of these interns have subsequently increased the interest in pathology and greatly assisted in augmenting the number of autopsies in other institutions where they have since been located.

At the Johns Hopkins Hospital the number and percentage of autopsies has also increased during the past few years, as is evident from the table below.

CONCLUSION

In order to obtain large numbers of autopsies, it is necessary to request them in every fatal case. It does not suffice that the individual who seeks permission for the post-mortem examination is interested in the outcome of his argument—everyone in the institution must be anxious for him to be successful. The only way this can be accomplished is to give to each one a return for this interest and cooperation. The physician and the hospital superin-

JOHNS HOPKINS HOSPITAL.
TABLE SHOWING PERCENT OF AUTOPSIES.

Year	Medical service.		Surgical service		Gynecological service		Obstetrical service		Pediatric service		Psychopathic service	
	Number of deaths	Percent of autopsies	Number of deaths	Percent of autopsies	Number of deaths	Percent of autopsies	Number of deaths	Percent of autopsies	Number of deaths	Percent of autopsies	Number of deaths	Percent of autopsies
1911	122	74.5	136	33.0	25	36.0	10	40.0	.....	.....	.....	.....
1912	151	70.8	116	31.8	27	25.8	11	81.8	.....	.....	.....	.....
1913	108	85.1	107	34.5	22	36.3	4	17.5	92	57.6	5	100.
1914	107	76.6	83	40.9	15	40.0	38	24.2	123	57.7	9	55.5
1915	96	70.8	96	65.6	21	52.3	27	70.3	138	59.4	13	61.5

Year	Total number of deaths 1911–1914	Total number of autopsies 1911–1914	Percentage of autopsies 1911–1914
1911	293	149	50.8
1912	305	160	52.4
1913	338	203	60.
1914	375	211	56.2
1915	392	251	64.

MONTHLY TABLE SHOWING PERCENTAGE OF AUTOPSIES, JANUARY TO SEPTEMBER 19, 1916.

Month	Medical service.		Surgical service		Gynecological service		Obstetrical service		Pediatric service		Psychopathic service	
	Number of deaths	Percent of autopsies	Number of deaths	Percent of autopsies	Number of deaths	Percent of autopsies	Number of deaths	Percent of autopsies	Number of deaths	Percent of autopsies	Number of deaths	Percent of autopsies
January	7	100.	9	55.5	1	100.	10	80.	7	42.8	1	.....
February	7	71.4	5	60.	1	100.	9	88.6	12	66.6	2	100.
March	5	60.	11	81.8	2	100.	6	100.	13	69.2	1	100.
April	17	82.6	9	44.4	2	100.	6	100.	15	73.5	.....	.....
May	12	83.4	6	50.	2	100.	10	80.	13	53.5	.....	.....
June	16	62.5	8	25.	3	100.	11	81.8	9	77.7	.....	.....
July	7	85.7	10	70.	1	100.	6	100.	23	43.4	1	.....
August	8	75.	3	66.2	3	66.2	11	81.9	17	65.	.....	.....
September	3	100.	2	50.	.....	.....	4	75.	5	80.	1	.....

SUMMARY—Number of deaths, 368. Number of autopsies, 261. Percent of autopsies, 70.9.

tendent must realize the benefit that accrues to him individually from the systematic performance of post-mortem examinations. As important as these individuals may be, the family and community are even more so. They should not only benefit through the educational value of the autopsy to student and physician, but the family should be told honestly, fully, and in simple language just what the findings are, the bearing these may have on the health of its other members, and, as far as this is possible, they should be told how they can protect themselves. The community should be given accurate vital statistics.

When all concerned realize that they are constantly receiving a return for their interest and cooperation in increasing the number of autopsies, it will no longer be necessary to discuss methods of obtaining them and protection for the hospital—autopsies will be demanded.

What the Intern Should Contribute to the Team-Work[1]

BY E. H. BECKMAN, M. D., Rochester, Minn.

In the consideration of team-work in any hospital, the working force of the institution must be taken into account. In the hospital of today we have:

1. THE DEPARTMENTS INTERESTED IN THE EXECUTIVE AND BUSINESS MANAGEMENT.—These are constituted by the general superintendent and his staff, whose duties should be strictly of a business and executive nature, and have no connection with the medical aspects of the hospital and no direct connection with the patients, except in the matter of the purchase of supplies, the arrangement of buildings, and the employment of persons to aid in the care of patients. Under the immediate supervision of the hospital superintendent is included the housekeeper, whose duties are in a way similar to those of the general superintendent, except that they are often more directly connected with the general comfort of the patient and the cleanliness and sanitary conditions of the institution.

2. THE VISITING AND CONSULTING STAFF.—The visiting and consulting staff of any hospital is responsible to the board of directors, and their duties are entirely concerned with the welfare of the patients. They have no direct connection with the management of the hospital, but are often called on to make, and often volunteer, suggestions for improvement in the executive and business management.

3. THE SUPERINTENDENT OF NURSES AND THE TEACHERS IN THE TRAINING SCHOOL.—The superintendent of nurses has a double duty in that she is interested in and responsible for the nursing of the patients in the hospital. In most hospitals she is the principal of the training school for nurses, and supervises as well as takes an active teaching position in the school. The faculty of the training school are most often appointed by her and carry on their work under her supervision.

4. THE GRADUATE NURSES EMPLOYED BY THE HOSPITAL.—Graduate nurses are employed in most hospitals in the care of private patients. They are directly responsible for the care of their individual cases. Their conduct and their work is under the supervision of the superintendent of the training school.

5. THE NURSES IN TRAINING.—The pupils in training may be regarded as (a) students in the school and (b) temporary members of the staff, who are employed to assist insofar as they are able in the care of patients while continuing their studies.

6. THE RESIDENT STAFF, COMMONLY KNOWN AS HOUSE OFFICERS OR INTERNS.—These latter are graduate physicians, connected temporarily with a hospital much in the same way as nurses in training, and located in the hospital for the same twofold purpose—to acquire knowledge and to assist in the care of patients.

I wish to discuss the relationship of the house staff to the various departments of the hospital just mentioned. The members of all of these departments, except the house officers, are more or less permanently connected with the institution; consequently their duties are in a measure fixed, and less likely to change than those of the house officers, whose terms of office are temporary, rarely lasting more than one and one-half years. Since this is true, the duties of the temporary staff must of necessity be arranged to fit into the routine of the permanent divisions of the hospital, and must be carried on in such manner as not to disturb the permanent organization or the routine of the institution. Most of the mistakes of house officers and most of the friction between house officers and members of the hospital force are due to the fact that interns do not appreciate that their term of office is temporary, and that their presence in the hospital and their duties must be arranged to fit into the permanent organization without conflicting with it.

1. THE SUPERINTENDENT.—Since the duties of the superintendent are executive and entirely of a business nature, while those of the house staff are medical and directly connected with the care of patients, there should be no cause for friction between these two departments. The usual occasion for misunderstanding is delay in procuring the necessary medicines and hospital supplies. The delay can be avoided in most instances if supplies are ordered in writing by the house staff directly through the storekeeper. Blanks for this purpose should be kept in the wards, so that they may be obtained at any time. These orders should go directly to the superintendent, who must approve them, or, in case they are excessive or extravagant, prevent the storekeeper from giving out the supplies. In this way extravagance can be avoided, and the house officers can often be taught that they are ordering supplies or medicines which are extremely expensive when something just as good and much more economical can be used. This method tends to make the house staff anticipate their patients' needs, and teaches them economy and efficiency. In cases of misunderstanding, all the facts are in writing and can be discussed by the house staff and the superintendent.

2. VISITING AND CONSULTING STAFF.—One of the functions of every physician is that of instructor. If he fails to remain an instructor throughout his life, he fails in a large measure to perform all his duties. This instruction must be continually carried on for the benefit of his patients. If he is connected with a hospital, it is also for the benefit of the interns and nurses who are connected with the institution. The failure of the permanent and consulting staff of any hospital to realize this important duty is often the cause of much friction and misunderstanding during their term of service. They should realize that the house officer is just out of school, that the nurse is at this time obtaining her instruction, that the principal attitude of physician to patient and nurse to patient is best learned by observation, and that consequently at every visit to the hospital they should be exceedingly careful to remember that they are teachers as well as physicians. The duties of the intern are to carry out the orders of the permanent staff, and, in order to do this, he must know first exactly what the permanent staff are endeavoring to do and the exact line of treatment they wish carried out to accomplish this particular end. He should

[1]Read at the meeting of the Catholic Hospital Association, Milwaukee, June 7-9, 1916.

also know the previous relationship between the individual patient and his physician; whether the patient is acquainted with his own ailment, whether he has been told how to cooperate in order to obtain the best results, and whether it is best for the patient to know all of the details connected with his illness. It is not fair to the house officer or to his patient to expect a young doctor just out of school to know intuitively all of the various details connected with the case. Difficulties arise from two distinct causes: First, the visiting staff do not give in detail the exact line of treatment they wish carried out. The reason for this is often that the time spent by the attending physician at the hospital is too short, and he thinks that the intern knows what should be done. This is a great mistake and leads to many errors in treatment. It tends to make the routine care of patients less careful and exact, and is often the cause of friction between the staff, interns, and patients. The more exact the attending physicians are, to the minutest detail, in outlining the care of each patient or each class of patients in the hospital, the more the house officer will learn from them, the better the patients will be cared for, and the less friction will there be. The second cause of friction and misunderstanding is that many members of the attending staff do not systematize any particular line of treatment for their patients, and in their own minds do not outline exactly what they are attempting or just how they expect to accomplish it. As a result, they are likely to change the method of caring for patients at every visit to the hospital. This brings confusion, makes for extravagance, and ends in poor treatment of the patient. The house officer working under such a staff is continually confused by the multiplicity of orders, and is not able in his immature medical mind to conceive the line of treatment or the ends attempted. It would add much to the harmony between the permanent and temporary staffs in any hospital if the permanent staff would write out an outline as a basis for the treatment of routine cases. One of the greatest causes of friction as well as of distress to the patient is the attempt on the part of the intern to consider the patient as belonging to him and to assume the individual responsibility for the case. In every instance the intern should remember that the visiting staff are responsible for each patient, and in case of doubt he should always inquire of the visiting staff and place every responsibility on them, where it rightfully belongs. If this is not done, it always means that the responsibility is assumed and divided between two heads; the intern does things for the patient that his chief dislikes; he may do things that his chief believes are not best for the patient. He may give orders that are distinctly harmful. This eventually means dislike on the part of the visiting staff for the house officer. It is likely to mean that the patient will form a dislike for one of the two. What I want to emphasize is that the intern should in every way possible endeavor to find out the exact line of treatment his superior is attempting to carry out and the definite end toward which he is aiming. If it is impossible for him to obtain this information from the visiting staff, he cannot be blamed for failing to contribute his share toward it.

During the convalescence of most hospital patients there comes a period when time hangs heavily on their hands. They welcome visits from nurses and the house staff at this period. The conversation naturally turns to medical affairs. In such an instance it is often easy for the intern to volunteer much information to the patient concerning his illness and advise him concerning his convalescence. This is a time when the patient is looking for information that may have been kept from him by his own physician, and he will often lay particular emphasis on any remarks made to him by a house officer. Many hours of worry and frequently sleepless nights have been caused by ill-advised remarks of an intern. Most physicians must learn in the school of experience that conversation with many patients must be extremely guarded, and that their remarks are very likely to be misunderstood or misinterpreted. Interns should remember that they should attempt to explain only minor details, and leave the explanation of the patient's case to his own physician. In this way much misunderstanding between patient and physician and between patient and the various members of the hospital family can be avoided. Silence is often golden, and the gold glows with an added brilliancy when it is encountered in an intern.

3. The Relationship of the Intern to the Superintendent of Nurses and Teachers in the Training School.—If there can be an understanding between the superintendent of nurses and the house staff that both of them are instructors in the same school, and that all of their work should be carried on so that the nurses under them could learn by observation of their methods at all times, much misunderstanding can be avoided. The interns should confine their particular part of the instruction to medical matters, and not attempt to instruct the nurses in the care of patients. On the other hand, the superintendent of nurses and the various instructors in the training school must confine their endeavors to the nursing of patients and not to their medical treatment. The insistence on written orders by the house officers for medicines, for special baths, and for special care will avoid much trouble.

4. The Relationship of the House Staff to the Nurses in Training.—The interns in any hospital have already had the opportunity of several years' instruction in medicine, while the nurses in training are only beginning or in the midst of their training; therefore the interns should endeavor to carry on their work so that it may be an example to the nurses for their attitude and relation to patients. The intern must regard himself as an instructor to the nurses. He should remember that the nurse often acquires her manner of dealing with patients from observing the attitude of the physician toward his patient. Rarely will a nurse be abrupt, irritable, or cross with a patient in the presence of a quiet, capable, even-tempered physician. On the other hand, nurses often acquire discourteous methods of handling patients from observing the same manner in the house staff. Since the nurses must learn to a considerable extent aseptic technic and reliable methods from watching the physicians, the intern should at all times, when dressing patients or carrying out any surgical procedure, not only emphasize, but in fact develop, a careful and almost elaborate method of procedure for the purpose of teaching the nurses the importance of surgical cleanliness. This applies also as well to the medical care of patients. If the writing of orders and the prescribing of medicines is done with extreme care, and even an elaborate ceremonial for the purpose of impressing the necessity of care on the nurses, they will quickly fall into the same routine. Many a good nurse has acquired slovenly methods from her association with a shiftless house staff. It has quite often seemed that when a new set of interns start in their service at some hospitals, they are regarded very much in the light of freshmen beginning their course in some universities. The permanent members of the staff and those connected for some time with the hospital have seemed to think it necessary to put these "green" interns through a set of methods similar to hazing students before they can be ac-

cepted as members of the hospital family. In some hospitals they are regarded as intruders instead of new workers in the ranks. Instead of being assisted in every way possible to become familiar with the hospital routine, their work has been made especially hard by the attitude of the older members connected with the institution. It should be remembered that at this time these house officers must learn the routine of the hospital, and that it can be learned much better and more quickly with the assistance of the older members of the family than in any other way. It must be expected that the new intern will make mistakes. He should be helped to avoid these instead of being led into them and then criticised. It should also be remembered that most young physicians are intelligent and desirous of completing their education; otherwise they would not spend the extra time and go to the expense necessary to serve this apprenticeship. Occasionally a keen observer among them can point out many ways in which hospital efficiency and the regular routine can be improved. The intern himself at this period must remember that he is in the hospital for only a short period; that he should not begin to criticise or attempt to make suggestions for improving the routine until he has been associated long enough to know the reason for most of the methods. He should also remember that he can learn a great deal from observing the work of the permanent hospital family, who have become efficient in their particular lines, and that this observation and the lessons he draws from it are one of the most valuable parts of his education. What I have attempted to show throughout this short discussion of the relationship of the house officer to the various departments of the hospital is that there is no place for criticism, competition, or strife, and that the best interest of the hospital and the intern can be secured only through mutual cooperation.

He Figured It Up

On one occasion a census clerk, in scanning one of the forms to see if it had been properly filled out, noticed the figures 120 and 112 under the heading, "Age of father if living" and "age of mother if living." "But your parents were never so old, were they?" asked the astonished clerk. "No," was the reply, "but they would have been if living." —The Medical Pickwick.

In a report of the Louisville, (Ky.) Board of Public Safety to Mayor John H. Buschemeyer it is recommended that steps be taken by the city in the near future toward the establishment of a home for incurables. The same report refers in complimentary terms to the efficient service being rendered by the Louisville City Hospital under the direction of Dr. J. W. Fowler. A marked increase in the number of persons applying for treatment at the hospital in both the resident and the out-patient departments is noted.

At a recent meeting of the Congress of Women's Clubs of Western Pennsylvania, held in Pittsburg, a resolution was adopted asking all of the hospitals of the city to admit women as both resident and staff physicians. Dr. Amelia Dranga, addressing the congress in support of the resolution, said: "I believe the attitude of men toward the admission of women physicians to the hospitals is not so much a matter of antagonism as of carelessness or unwillingness to take the initiative. The University of Pittsburg has established two scholarships for the medical training of women, but the Pittsburg hospitals bar women interns, and no man or woman can pass the state examination in Pennsylvania today without having a year's experience as an intern in a hospital. Not a day passes that does not show there is need of the woman physician. It is not a sex fight. There is plenty of work for all."

CURRENT HOSPITAL LITERATURE

ALBERT ALLEMANN, M. D., Foreign Literature.
Army Medical Museum and Library, Office of the Surgeon-General, United States Army.

The Elverum Community Hospital. Dr. T. Petersen. Tijdsskrift f. d. norske Laegefor., Kristiania, 1916, XXXVI, No. 17.

This small town hospital was built in 1906 at an expense of only 17,000 crowns ($4,590). It is a wooden structure of two stories. It consists of a central building and two wings, which extend on each side obliquely forward, so that the whole front has a concave appearance. The central structure contains the dining room, kitchen, baths, director's rooms, etc. The patients' wards are in the side wings. The first floor receives only tuberculous persons, and the second floor is intended for other patients. On the first floor there is a large veranda, intended for open-air treatment of the tuberculous patients, which extends along the whole front of the building. The first floor has room for 12 tuberculous patients and the second floor for 12 patients with other diseases.

The Yerkes-Bridges Point Scale as Applied to Candidates for Employment at the Psychopathic Hospital. C. S. Rossy. Boston Med. and Surg. Jour., 1916, CLXXV, No. 23.

Sixty candidates who applied to the Psychopathic Hospital for employment from February to June, 1915, chiefly as attendants, were subjected to psychological examination. Only 28 percent of the candidates had attended high school; the ages varied from 18 to 55, the average age being 25. Of these sixty candidates, 63 percent were graded as of normal mentality—that is, above the 15-year-old standard—17 percent were found slightly subnormal, and 20 percent were graded as intellectually inferior. In the third group many individuals gave histories of alcoholism, immorality, or delinquency. Rossy believes that, in view of the high percentage of defective and otherwise mentally incompetent persons who seek employment as attendants in state hospitals, systematic psychologic examination of the general intelligence of such candidates would be desirable.

The Berlin Institution for Crippled Children. D. C. McMurtrie. Am. Jour. Care Cripples, New York, 1916, III, No. 1.

This institution is one of the most complete of its kind in the world. It was established in 1906, and stands under the direction of the eminent orthopedist, Dr. Biesalski. The institution is located on an extensive plot in the Grunewald, in the suburbs of Berlin, and can accommodate from 250 to 300 children. There were originally three divisions of work—the hospital section, the educational section, and the industrial section. In 1909 an out-patient department was added, providing orthopedic attention for

many crippled children at their homes. For the convenience of many patients a clinic and dispensary has also been established in the central part of the city. The main building of the hospital has the form of a V. Thresholds are absent throughout the building, and, besides numerous stairways, an inclined plane crosses the building from top to bottom for the convenience of the crippled children. The school division, consisting of five class rooms, and the various workshops are on the ground floor. A fine gymnasium extends in height through two floors. In the south wing of the second floor is the surgical division, containing an examination room, two operating theaters, a roentgen room, etc. At some distance from the main building is a pavilion for infectious diseases. A most important feature of this hospital consists in the extensive grounds, covered with a beautiful forest of fine, tall pine trees. Here the children play and work in favorable weather, and the classes are taught in the woods whenever possible.

At the age of 14 the boys leave the elementary school section and enter the trade school. After a three-years' apprenticeship they leave the institution as properly qualified workmen. They learn carpentry, bootmaking, tailoring, blacksmithing, etc. The girls learn spinning, lacemaking, tailoring, sewing, etc.

The Need of a Special Clinic for Cases of Heart Disease. (A Female Medical Clinic, Report from Mount Sinai Hospital Dispensary). Morris H. Kahn, M. D. New York Med. Jour., 1916, CIV, No. 21.

In spite of the fact that much time and attention was devoted to the cases of chronic heart disease, dispensary care in a general clinic was found inadequate. For the earlier and milder cases of heart disease, two methods of handling are recommended—(1) the educational and (2) the supervisory.

1. Kahn believes that the usual policy in most general hospitals of admitting only decompensated or urgent heart cases is wrong, both medically and economically. He believes that if, when heart disease is first discovered, the patient were sent to a hospital for two to four weeks, and there observed and taught how to adapt his life to his capabilities, decompensation might be avoided in many cases and postponed in others. Thus a short hospital sojourn of a few weeks at the outset will save later occupancy of a hospital bed for many months.

2. The associated or alternative method is the supervision of patients with heart disease at their homes by a physician and nurse associated with a special clinic equipped for the study of cardiac cases. Since patients with heart disease are fated to lose in the struggle for existence when pitted against healthy persons, Kahn suggests that it may be desirable to segregate industrially these handicapped persons, at the same time keeping them under medical advice, instruction, and supervision in a special clinic and at home by the nurse of the clinic.

Researches on the Presence of Virulent Tubercle Bacilli in the Air and Dust of the Wards of Reknes Sanatorium. (Undersoekelser angaaende tilstedevaerelse av virulente tuberkelbaciller i luft og stoev paa Reknes sanatoriums vaerelser). Dr. E. Kaurin. Norsk Magazin f. Laegevidenskaben, Kristiania, 1916, LXXVII, No. 1.

The author used Bing's and Schoenauer's methods to make cultures from the air and dust of the rooms of tuberculous patients. He inoculated fourteen guinea-pigs with the cultures supposed to contain tubercle bacilli. All the animals remained in perfect health for four months, when they were killed and examined. None of them showed any signs of tuberculosis. These experiments led the author to the conclusion that in a tuberculosis sanatorium with large rooms and plenty of light and fresh air, and in which all the principles of hygiene are scrupulously observed, there is no danger of infection from tuberculosis. This agrees with the past experience at the Reknes Sanatorium, as during the seventeen years of its existence not a single case of tuberculosis developed among the nurses and the attending personnel.

State Aid for Sanatoria for the Tuberculous. H. M. Bracken, M. D. Journal-Lancet, 1916, XXXVI, No. 23.

The tuberculous patient, Bracken believes, should be hospitalized, not because he is sick, but because he is dangerous to the community; and on this basis the state may properly be asked to aid in the hospital care of the tuberculous. The hospital for the early cases may be chosen without reference to nearness to the patient's home. The state may well be expected to provide for the construction, equipment, and maintenance of institutions for such cases. Patients with advanced tuberculosis should be cared for in institutions not too far distant from their homes. Bracken believes that the best plan is to place the responsibility of managing a local institution on a county or a group of counties, state aid being afforded on condition that the local institution conform to a required standard in construction, equipment, and maintenance.

The American Hospitals in Germany and Austria. Dr. John R. McDill. Sonntagsbl. d. N. Y. Staats-Ztg., 1916, Nov. 5.

There are six large hospitals in Germany and Austria which are managed exclusively by American physicians. Many thousands of wounded soldiers have been treated at these hospitals. These establishments are maintained by collections made in the United States. The author is director of the American Reserve Hospital No. 5 at Graudenz, a strong fortress in Eastern Prussia. He, as well as his assistants, formerly studied in Germany, and is thoroughly familiar with the German language. At first the American physicians were looked on with suspicion and distrust by the population, but the splendid work and the unselfish devotion of these men soon gained the admiration, the respect, and the hearty cooperation of all the people. The hospital is established in a large college building, which is as admirably adapted for this purpose as if it had originally been planned for a hospital. It contains 500 beds. Ten well-trained nurses are assisted by fifteen men of the German hospital corps. The author expresses the view that Germany is very much in need of assistance in the care of her wounded, and hopes that the American hospitals may be maintained to the end of the war.

The Modern Medical School—Its Relations to the Hospital and to the Medical Profession. George Blumer, M. D. Albany Med. Ann., 1916, XXXVIV, No. 11.

Blumer says that, while the advantages to the medical school from affiliation with the hospital are obvious, the advantages to the hospital have been less generally recognized because medical school authorities have often failed to educate hospital trustees adequately. Affiliation between the hospital and the medical school provides the men and often the means to conduct the various laboratory departments so necessary to the up-to-date hospital, more cheaply and efficiently than would otherwise be possible.

The objection that the use of ward cases for teaching is distasteful to the patient, Blumer believes to be grossly exaggerated.

"Another problem which the hospitals have to solve, apart from and yet related to the teaching problem, is the reorganization of their staffs. The old system, whereby each department had several heads of equal rank who served for definite portions of the year, is, on the face of it, incompatible with the highest efficiency. No sensible business man would put his affairs into the hands of six general managers who changed every two months. He would be fully aware that such a scheme would be incompatible with continuity of policy and equality of achievement and would result in failure. In hospital work under such a plan the failure is not apparent, but it is there just the same. It is essential to satisfactory hospital work that each department should be under the head of one director who should, with the assistance of his staff, map out the policy and supervise the work. This does not mean that the opportunity for the practitioners of the neighborhood to obtain hospital positions is done away with, it simply means that their work will be conducted along lines laid down by the head of the department to whom they will be responsible."

The French Red Cross Hospital Ship "Been Hoa" (De "Been Hoa" of the militaire Fransche Roode Cruis boot). Miss Koning. Noskomos, Amsterdam, 1916, XVI, No. 35.

Miss Koning, a Dutch nurse, who traveled from Toulon to Salonika on a French hospital ship, describes the boat as follows: The ship has six large wards. The largest can receive as many as 300 patients. There are six bathing rooms, four operating rooms, a drug room, an x-ray room, and other minor rooms. The ship is splendidly equipped. The beds are of iron. The rooms for sick and wounded officers have 1, 2, and 3 beds. The operating rooms are as completely equipped as those of a modern hospital. The ship has a bakery and a machine to make artificial ice. The patients are always supplied with fresh meat, as live oxen, cows, sheep, rabbits, and chickens are kept on board.

The Surgical Staff Conference. Frank E. Adair, M. D. New York Med. Jour., 1916, CIV, No. 21.

The weekly staff conferences of the second surgical division of the New York Hospital are attended by the entire attending and house staff. They include (1) a review and discussion of the work of the past week, (2) a report from the standing staff committees (out-patient department, clinical clerks, operating room technic and efficiency, supervision of charts and clinical records, ante-operative and post-operative treatments), and (3) a brief report on any subject assigned by the chief to a staff member, or a review of the literature having a bearing on some unusual case in the hospital. Review of the work of the past week includes the study of (1) infections, (2) deaths, (3) post-operative complications, pneumonias, hematomas, etc., and (4) unsatisfactory results in cases traced by the follow-up system. Every case of operative or post-operative infection is studied at the conference for the purpose of tracing it to its source. Cases of diagnostic error are studied to determine whether the error is due to (1) lack of consideration of the patient's history, (2) haste in the physical examination, (3) lack of laboratory data, or (4) other causes. Free discussion is the privilege of every member of the staff at the conferences. Among the advantages which Adair attributes to the system are the following: (1) the attending surgeon gains through the weekly conferences an accurate idea of the entire activity of his service, the strong and weak points of individual members of his staff, and the surgical judgment, diagnostic skill, and technic of each operator; (2) the mere fact that cases which have an unsatisfactory end-result are to be reviewed and critically discussed is sufficient to induce increased caution and thought in ante-operative diagnosis, operation, and post-operative treatment; (3) in any case of unusual interest much may be learned by systematically reviewing at the conference the history, physical examination, laboratory findings, x-ray findings, operative note, and subsequent course of the patient in the hospital.

Caring for Patients at Home and in Hospitals (Ziekenverpleging aan huis en ziekenhuisverpleging). Dr. J. C. Wortman. Ziekenhuis, Amsterdam, 1916, VII, No. 9.

To prevent crowding of hospitals and to avoid the necessity of building new hospitals, it has of late years become customary in many Dutch cities to attend certain patients at their homes. The nurses who visit these patients daily can, of course, do much good, but it is clear that they cannot fill the place of a hospital. It is true, many public physicians are too quick to send their patients to the hospital, and the patients, too, are always ready to go to the hospital, because they know that they will be well cared for and that the city will demand of them only a small compensation. Some cases of hospital abuse will always occur, but this abuse, the author says, should not be permitted to develop into a system of extravagance.

The indications and contraindications for hospital care must not be based on the desire to limit the number of hospital patients, but on purely medical desiderata. The social status of the patient must also play a rôle. The social factor has of late years become of less importance, however, than the medical considerations. The hospital has gradually become a true technical establishment where the sick are cured. For the same reasons that a surgical patient is operated upon at the hospital, all other patients, without regard to the disease, are received if hospital care is more favorable to the case than home treatment.

Hospital treatment is indicated especially in typhoid fever, diphtheria, scarlet fever, and diseases which, from their infectious nature, are a danger to the community. Of the chronic diseases, tuberculosis should be treated at special tuberculosis hospitals. Nervous diseases are best treated at special hospitals, where the chances of a cure are much greater than if the patient were treated at home. Hospital treatment is contraindicated in fresh cases of apoplexy, cases of gastric and pulmonary hemorrhage, and croupous pneumonia.

The Clinical Thermometer as a Carrier of Infection. L. Martocci-Pisculli, M. D. New York Med. Jour., 1916, CIV, No. 18.

Cultures made from clinical thermometers washed in running water after use by physicians gave startling results, which suggested the desirability of an investigation. This was carried out at Willard Parker Hospital under the direction of Professor William H. Park. Of eight thermometers used on diphtheria patients in the hospital, four were washed in water and cleaned with sterile gauze and four cleaned without being washed. All gave cultures of pathogenic microorganisms. Martocci-Pisculli believes that these experiments establish "the fact that the thermometer is a very dangerous carrier of microorganisms, and that the haphazard way of cleaning it and passing it from one patient to another without thorough disinfection is fraught with the greatest possible danger."

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An organization of the hospitals of Baltimore for closer cooperation and the promotion of high standards of efficiency was effected at a meeting held at the Mercy Hospital December 6. Dr. H. J. Moss, superintendent of the Hebrew Hospital, is said to have been largely responsible for the movement, which it is hoped may be made of statewide importance by enlisting the interest and active participation of all the hospitals of the state. The first step taken by the new association was the passage of a resolution asking the state compensation board to provide that each patient sent to a hospital under the charge of the board shall be paid for at the rate of $2 a day, instead of $1, as according to the present arrangement. Another move soon to be made will be in the direction of securing exemption from the city water tax. The officers of the association are Dr. H. J. Moss, president; Sister Carmelita, of Mercy Hospital, vice-president; and Mr. H. Warfield, secretary-treasurer.

An election will be held throughout Scurry county, Texas, December 30, on a proposition to issue $25,000 in bonds for the erection and equipment of a county hospital.

DEPARTMENT OF NURSING

Conducted by MISS ANNIE W. GOODRICH,
Teachers' College, Columbia University, New York City.

Please address items of news and inquiries regarding Department of Nursing to the editor of this department, Teachers' College, Columbia University, New York City.

A New Year's Greeting

"Ring out, wild bells, to the wild sky
The year is dying in the night—
. . . . . .
Ring out, wild bells, and let him die."

The furies let loose on the earth may well shriek with frenzied laughter if we, in our peaceful homes, warm with the glow of the fire and the Christmas candles, sing as we always have sung on Christmas eve the angel greeting, "Peace on earth, good will to men." But if this year our lips must be silent, the unquenchable hope in our heart whispers to "wait God's instant men call years," and while we wait we work; for again the spirit of hope whispers that the ever-increasing army of nurses is a strong wing of the great peace army that is *going* to conquer the world, and we, too, have our program of preparedness to look to. As we review this army, note the changes that are gradually taking place in the various training fields, and the appointments to important posts, we cannot fail to be encouraged by the very evident strengthening of our forces all along the lines. Our numerical power is undoubtedly increasing. Over 70,000 nurses have already obtained state recognition of professional preparedness through registration. In the past year over 3,500 candidates applied for admission to the accredited schools of nursing of one state alone. All over the United States there is a steady concerted effort to raise the educational standards of admission to these schools, and a very definite and encouraging result is being obtained. For the few schools that still assert that they cannot demand more than the completion of the grammar school, hundreds of schools find it possible to require one, two, and three high school years, and even the full high school course, for admission, while from one of our largest—the Massachusetts General Hospital Training School—comes the report that not only has every pupil completed the high school course or a full equivalent, but fifty-four have had additional work in normal schools or colleges and twenty-two are college graduates. Furthermore, four of the faculty of this school are also college graduates.

A not less important factor in what we believe to be a very definite advance in professional efficiency is the increasing effort of the boards of training schools to provide for their students better teaching and a more comprehensive practice field. Perhaps the most conspicuous evidences of progress, however, are the various appointments that have been made in the past few months, to a few of which we must call attention:

The selection of Miss Clara D. Noyes for director of the National Red Cross Bureau of Nursing Service has sent a wave of rejoicing over the land.

It would be difficult to find two women of nobler presence or nobler minds than Miss Delano and Miss Noyes, on whom has fallen the heavy and perplexing problem of national and international nursing relief through professional and volunteer workers. The national service that may eventually be rendered by the Red Cross, not less through its educational program than its program of relief, seems almost incalculable. We know of no members of the profession who would more soundly and efficiently develop these schemes than those into whose hands the task has been placed.

Miss Noyes' successor at Bellevue is Miss Amy Hilliard, who will follow, we are sure, her notable work in the state as inspector of training schools, with a not less notable achievement here; for she will not fail to grasp in its fullness the great opportunity of rendering through a municipal hospital the most efficient nursing care to the sick poor, while using for the benefit of the students, not only of its own school, but from small schools throughout the country, the richness of its clinical material, its fine equipment, and its conspicuously large teaching and supervising staff.

Not less gratifying is the appointment of Miss Elizabeth C. Burgess, a graduate of Teachers' College and recently superintendent of nurses of the Michael Reese Hospital, Chicago, as the inspector of nurse training schools in New York state. Miss Burgess assumes her work with an academic and professional equipment, a varied experience, and an intrepidity of spirit that make her appointment seem a very notable event to those who are deeply interested in advancing state standards of nursing education.

The appointment of Miss Sally Johnson, of the Peter Bent Brigham School of Nursing, Boston, to the superintendency of the Albany Training School, seems also, to those who know Miss Johnson's ability and who also know the excellent teaching field this school offers through the Albany Hospital, with its varied services and the Albany School of Medicine, too important to pass unrecorded. In order that Miss Johnson may advance the school to its highest proficiency, the board of trustees has greatly enlarged the force of teachers and supervisors in this school.

Last, and big with promise, comes an announcement from which we cannot forbear to quote at length:

"In June, 1916, the Board of Trustees of the University of Cincinnati, on the recommendation of the mayor of the city, the director of the department of Public Safety, the dean and faculty of the Medical College, and the president of the university, made the School of Nursing and Health a department in the College of Medicine. This step was taken in recognition of the pressing need for more adequate training for nurses, and of the obligation of the city departments concerned to make through cooperation the highest use of the facilities of the hospital and of the university in the interest of the health and education of the community which they serve.

"By special arrangement of the two departments of the city government operating the university and the Cincinnati General Hospital, the hospital provides a laboratory for the practice of nursing and cooperative assistance to the student nurse, while the university, in its College of Medicine and other colleges, provides scientific instruction essential to the pursuance of the study and practice of nursing, thus making possible the preparation of women for the nursing profession as private, institutional, and public health nurses.

"In addition to the regular three-year course of nursing leading to the diploma of graduate nurse, the university provides a five-year combined collegiate and professional course leading to a degree of bachelor of science as well as to the diploma of graduate nurse."

The officials of a great city, concerned to raise its standards of health, have opened to women of education entering the nursing profession its institution of learning and its institutions for the sick, and have provided the twofold credit we have been awaiting—credit for advanced academic preparation to those entering the nursing profession and academic credit for the work in the practice field. And note, fellow-workers, known as private nurses—you whose service represents the concentrated essence of nursing care, you who so often add to the heavy demands of the day the long vigil of the night, and the importance of whose field has of late been so little emphasized—note that this is one, and the first, of the three fields for which it is stated this splendidly comprehensive preparation in nursing is being provided.

"Ring out old shapes of foul disease,
Ring in a thousand years of peace;
Ring out the old, ring in the new,
Ring, happy bells, across the snow."

ANNIE W. GOODRICH.

Clinical Laboratory Technic for Nurses

BY ANNA L. GIBSON, R. N.,
Instructor in Clinical Laboratory Technic and Assistant Matron Superintendent.

PAPER III.

The demand for specially trained nurses to occupy positions as office nurses and laboratory assistants in small hospitals is steadily on the increase, and to meet these new demands the instruction received in the training schools is not in itself sufficient. The constant broadening of the nurse's field of activity has brought new responsibilities to the training schools which as yet they are unable adequately to meet; but the time is fast approaching when laboratory technic will be universally and systematically taught in our training schools.

At present post-graduate teaching of nurses seems to be the solution of this problem, and it has now become a potent factor in elevating the efficiency of the nursing profession. It is most gratifying to observe how the trained nurse is becoming more and more recognized by the medical profession, and they acknowledge that medical and surgical technic would hardly be what it is today had it not been for the development of the trained nurse to supplement their work and assist them in carrying out the complicated and technical procedures of modern practice.

It is no longer considered that any woman can be a nurse and that little knowledge of the most superficial kind is sufficient for her. The modern training school prepares a woman for many branches of civic usefulness. The actual care of the sick is but one part. Many nurses think that the mechanical side is all there is to nursing. They are content with their education after graduation, and make no effort to raise themselves from merely being members of a skilled occupation to the standpoint of a learned profession. It is true, women did good nursing in the past without much knowledge of bacteriology, chemistry, hematology, or pathology, but they might have accomplished greater results had they had more instruction in these sciences.

The profession of nursing, like scientific medicine, is a child of progress. The development of scientific medicine is comparatively recent, and the past few years have added much to the knowledge of bacteria and protozoa; and because of the close relationship of the medical and nursing professions, it is necessary for us to continue to be students, that we may keep abreast of the new and practical advancements. Training in laboratory methods will give nurses a better understanding of recent progress, and make them more intelligent observers. It is most important for a nurse to cultivate the faculty of observation, and she must be conversant with the symptoms and every detail of the work pertaining to the patient's welfare, for such observations will greatly assist the doctor in making a correct diagnosis.

Laboratory methods in the past twenty years have done more to emancipate medicine from routine and thraldom of authority than all the works of all the physicians from the days of Hippocrates to Jenner, and but a beginning has been made as yet. The rapid development of bacteriology and hematology demonstrated the need of using the methods of these sciences in clinical laboratories. Doctors realize that in the diagnosis of a case the sum total of all the examinations clinically, and those which are ascertained by laboratory tests, must be considered in justice to the patient and the reputation of the hospital.

In this age of specialization doctors are working with a precision more careful than ever before, and nurses with no knowledge of laboratory technic can easily mar all they are striving to accomplish. Physicians are often hampered in their work in hospitals which do not encourage and afford facilities for laboratory and research work. This is especially true of the smaller hospitals; but they are beginning to realize the need of proper equipment for such work, as the great benefits derived from laboratory findings and the additional data rendered available in the study of cases are brought to their notice. The clinical laboratory work of the large hospitals is done by medical students, and considered as part of their education. The small hospitals, isolated from the schools of medicine, do not have the medical students available, and so they are asking the nursing profession for assistance.

While visiting the various hospitals and clinics in Europe, I found the nurses making routine examination of feces, stomach contents, sputum, and urine. The doctors consider this work somewhat of a drudgery, and, by having a nurse to do it, valuable time is saved for more important work. They also aver that a nurse gives more careful attention to detail and is much neater in her technic than the medical student. This teaching is a new departure in the training of nurses, and no attempt has hitherto been made to give systematic instruction.

The laboratories of the Huntington Hospital are well equipped and offer exceptional opportunities for such teaching, and this training in laboratory technic is offered graduate nurses who can present evidence of the satisfactory completion of a course in a nurses' training school of approved standards, connected with a hospital in which a complete general training of not less than two years has been given, and provided they are prepared to give adequate time and study to the work. Nurses are required to conform to the rules of the hospital, and are expected to perform any duty assigned to them by the matron, including day and night work. This course is designed to give the nurse such training as would enable her to be of value in a physician's office in making routine examinations along clinical lines, and in exceptional cases such instruction should fit a nurse for practical teaching in a training school or work in the technical supervision of a laboratory in a small hospital. The instruction includes qualitative and quantitative analysis of urine, functional tests, examination of blood, feces, sputum, qualitative and quantitative analysis of stomach contents, study of bacteria commonly encountered in pathologic processes, body

fluids, and preparation of tissue for histological study. Methods of making normal and standard solutions, stains, reagents, and culture media are also taught. A nurse must become familiar with and accurately perform each simple test before she is taught more complicated methods.

I have labored under considerable difficulty in teaching this technic from books written for medical students. The work of the nurse is that of a technician, not a diagnostician, and the laboratory books which contain the innumerable and minute detail indispensable to the medical student are too advanced and beyond her comprehension. The course covers a period of six months, with six hours of instruction and six hours of laboratory work a week. Oral and written examinations are given at stated intervals, and, if the final examinations are satisfactorily passed, a personal certificate is given, signed by the director of the hospital. This schedule is being revised, and we hope to have lectures given by members of the staff. The work requires of the nurse a high degree of technical skill and intelligence, and she is a valuable asset to the hospital at the same time she is studying to increase her own efficiency.

The Present and Future Aspects of Reciprocity[1]

BY C. A. BAHN, M. D.

The future of nursing reciprocity hinges on the standardization and inspection of training schools. There is but one way to eliminate inferior training schools, and that is by pointing out weakness by comparison, which, with publicity, means standardization.

Training schools are institutions of learning just as are universities. The public and the profession demand that the prospective nurse have systematic and proper instruction according to modern approved methods. You are gathered here to specifically summarize what modern and approved methods really are, and what constitutes the essentials of a training school. No one thing or even five can determine this. Beds alone, in a hospital, do not make a nurse. The actual time of training, two or three years, may mean much or little. All of the vital factors must be considered even to cleanliness and order. Dirt and discipline do not go together in a hospital.

A method of classification for training schools on an educational basis must be arranged which will include all the essentials of nursing training, which will leave but little to the personal element of inspection, and which will be applicable to every training school in this country. Such a form of classification or grading must be based on the fact that a hospital and training school of a given capacity, equipment, and organization would have certain specific requirements, and, not having all of these, passes to a lower class in which all requirements are met.

A vital feature of reciprocity is the preliminary requirement. How many nurse boards are positive that their preliminary requirements are being fulfilled? I doubt that there are ten. If you have preliminary requirements, enforce them. If a board is directly responsible for student nurses' preliminary education, why not assume that responsibility during the student's probation, when deficiencies may be rectified?

The inspection and regulation of training schools are the real work of a nurses' examining board. Nurses are made in a training school, and not by a state board examination. The time will come when training school standardization will make state board examination unnecessary. This inspection should be made by the secretary or some duly appointed officer, and to verify a detailed specific statement of the institution, as well as to suggest improvements as the result of comparison with other training schools. This can be accomplished only by uniformity and systematic comparison, which also eliminates the personal equation. Without inspection, training school regulation is but little advanced over the correspondence course of nursing. If standardization and inspection of training schools is desirable, is it not ten times more so on a uniform basis applicable to every training school in this country?

The reciprocity problems which we must solve before nursing reciprocity can really be called reciprocity are these:

1. Will nurses' boards recognize or refuse all nurses from another state, or will they recognize only the training school and qualifications of the individual applicant? Is reciprocity to be a sisterly pact to overlook all sins of omission and commission of training schools, or is it to be based on the fundamental question of individual qualifications? The purpose of reciprocity is to permit registered nurses of a certain excellence to register in another state without a second examination. How is this excellence arrived at? By a state board examination? I do not think so, for this, at best, eliminates the lowest 5 to 10 percent; besides, no one board examination is more difficult than another. Those who pass are of varying degrees of excellence, depending on their training schools and supplementary training. Should 80 percent of this number be barred from reciprocity because the other 20 percent do not comply with some minor requirement of another board? I think not. The purpose of reciprocity must not be defeated by red tape. State boards must not be arbitrary, and must not let petty problems interfere with the moral and legal rights of the registered nurses, whose agents we are.

2. What shall we do with the nurse graduated and registered some years ago, who applies in a second state for reciprocity? She doubtless does not meet present requirements, and should not be expected to. It is only fair that she be accepted or rejected on requirements of the time of registration in the first state. Remember, requirements for 1916 apply to nurses who enter training in 1916, and not to nurses who graduate in 1916. Nurses graduating in 1916 must conform to 1913 or 1914 requirements, depending on a two- or three-year requirement at that time. A nurse graduated in Colorado in 1910 and passed an examination before the Colorado board in 1910, and applies to this board in 1916. Will we consider her on our 1910 requirements, or, if prior to the organization of this board, to our earliest requirements, or will we consider her application on the basis or our 1913 or 1914 requirements? I think we should consider the application on our 1910 requirements. If the nurse complied with the Colorado law and could have registered in this state in, say, 1912 without examination, we should accept her application on the same terms today.

3. Now consider the same case, but assume that the nurse registered in Colorado by waiver and not by examination. Shall this board require an examination, or shall we consider the application on 1910, 1914, or 1916 requirements?

4. Should state boards recognize the law of another state literally, or shall the question of enforcement be considered? Many states have two-year laws, but three-year requirements, etc., and a moderate law enforced accomplishes more than a perfect law not enforced.

[1]Read at the convention of the American Nursing Association, New Orleans, May 1, 1916. Printed by courtesy of the American Journal of Nursing.

5. What relation does the compulsory law have to reciprocity? And, in this connection, are the so-called compulsory laws compulsory, and have they been tested in court? They assume no jurisdiction over the practical nurse, and simply prevent the use of the terms trained, licensed, graduated, and registered by the unauthorized as opposed to the noncompulsory laws, which include only the terms registered or licensed. Can a law prevent a person assuming to be a trained or graduated nurse if that person has had some training or is a graduate?

These are problems which you must solve before your agents, the state boards, can apply the principles involved. I believe the solution of the reciprocity problem consists in each state tabulating its detailed requirements for each year or two years for the past five years. Consider reciprocity of past graduates on the basis of requirements at the time of registration to the first state. For nurses graduating after January, 1917, reciprocity should be considered on the basis of the training school alone. The grading of training schools in the manner referred to in the eight months intervening will give the various boards ample opportunity to classify their various schools. The very fact that a number of boards consider applicants on the basis of a uniform training school requirement will force, by sheer publicity, practically all training schools to recognize this form of classification.

There is a crying demand for a small, strong national educational committee. Give them power to act and lots of postage stamps. With energy, justice, business management, and a reasonable expense, this committee can do more for organized nursing in three years than has been accomplished in the past twenty-three years. The secretary should give all her time to the position. The duties of this committee would be in part:

1. To formulate ideal nursing laws. If this parent organization has not framed an ideal law, how can you expect the suborganization to do so? Legislation demands education.

2. To formulate proper preliminary requirements, training school requirements, and a method of training school classification preparatory to the grading of every training school in this country on a uniform basis and eventually from a central source.

3. To formulate suitable literature for wide circulation in states having no nursing laws, as well as to organize nursing bodies in such states to institute suitable legislation.

4. To assist, especially the newly organized state boards, in systematization of board work.

5. To formulate suitable application forms, uniform record systems, and other stationery used by state boards.

State boards need more interest, greater cooperation, and better management. Can you expect forty-four separate organizations to act in unison without a directing hand? The knowledge, justice, activity, and power of such a committee must, if properly managed, soon dominate the individual state board, the training school, and legislation. Has not a similar body of the American Medical Association done this, and more? If you members of the American Nurses' Association want better training schools, better state boards, better legislation, and real reciprocity, you must decide specifically on the present problems, organize a strong committee, with power to act, and have them assist the various state boards and direct what you wish accomplished. You have it in your power to regulate training schools, legislation, and reciprocity. If you do not make the best use of your power, you and you alone are to blame. The grading of training schools under your direct supervision will do more to strengthen your organization, unify state boards and legislation, and clarify the reciprocity problem than all else together.

To conclude, if the ideas here expressed meet your approval, criticise, that they may be improved; if they do not meet your approval, criticise anyway. Criticism means interest—interest means action. Action is needed.

Bacteriology in the Curriculum of the Training School[1]

JANE VAN DE VREDE, R. N., Assistant Bacteriologist, Board of Health, Savannah, Ga.

The purpose of this paper is to deal with the teaching of bacteriology to the student nurse, with special reference to the small hospital and training school. From a somewhat limited experience and a wider observation, the writer ventures to state that the subject has not been well taught in the smaller schools up to the present time for the following reasons:

1. The system of instruction has been faulty.
2. Teachers have not been provided.
3. The text-books have been too technical and the material not well arranged for the development of the subject.
4. Sufficient time has not been allotted to it in the curriculum, nor have adequate facilities been furnished for carrying out instruction.

The general plan for the teaching of bacteriology to nurse students has been a course of lectures given by a physician, usually a member of the hospital staff. Though valuable time and energy have been generously given by the instructor, poor evidences of success are usually obtained. Why? Because we are expecting the impossible.

No subject can be adequately taught to academic students by a system of lectures alone, and especially not to nurse students coming from various institutions of elementary instruction, with no opportunity for grading such in the training school. Lectures should be given to nurses as comprehensive, complemental instruction after careful classwork has been accomplished, the fragmentary, more or less disjointed lesson plan being supplemented by logical presentation of the subject in its entirety. The classwork should embody some general scheme correlative with the rest of the nurses' training, attaching new knowledge to old wherever possible.

The logical teacher for this subject in the small training school is the surgical nurse. The daily practice of sterilization, disinfection, and contact with infectious materials, and the administration of immunizing agents, afford abundant opportunity for the repetition of principles to specific procedures. Unfortunately, most nurses specializing in surgical and executive hospital work in the smaller institutions have received their training and instruction in bacteriology under the present plan, and practice the underlying principles involved in the discharge of their duties by the simple "rule of three," as it were. Bacteriology is to such rules what the higher mathematics are to arithmetic—the processes and rules are explained and justified. It makes intelligent individuals rather than automatons of nurses.

In order, then, that the teaching of bacteriology shall be made immediately more satisfactory in the small training school, what can be done? The need could be met by a teachers' manual of bacteriology. Such a manual should be written by a nurse specially prepared in bacteriology—one who is a born or trained teacher. Written for use in conjunction with a text-book for nurses on

[1] Read at the twenty-first annual convention of the National League of Nursing Education.

the subject, it would go far toward solving a problem which many have realized, but have been unable to deal with successfully. While there are many admirable text-books on the subject, most of them for one reason or another are not ideal for the small training school. A nurse's knowledge of bacteriology needs usually to be developed from the foundation. Where a high school diploma or its equivalent is required preliminary to hospital entrance, familiarity with the subject has been acquired through courses in elementary bacteriology, zoology, and biology, but, where these advantages cannot be commanded, the training school must attempt to make up the deficiency. The whole subject should be considered in its relation to health and disease, and approached along the more familiar processes of vegetation, fermentation, and putrefaction. Instruction should begin in the preparatory period and continue at intervals through the entire time of training.

A suggested course is here outlined, covering three periods—thirty hours of classwork and ten lectures: (1) during the first year, sixteen lessons of one hour each, twice weekly, with two introductory lectures; (2) during the second year, eight lessons of one hour each, once weekly, with four lectures; (3) during the third year, six lessons of one hour each, once weekly, with four lectures. Note-books should be required throughout the course, and corrections reviewed in class. Each class may be divided into quiz review of past lessons, fifteen minutes; subject matter of the day's lesson with demonstrations, thirty to thirty-five minutes; brief explanation of next lesson, giving references, ten to fifteen minutes.

The first period should cover:

1. Two introductory lectures, one on the history and development of bacteriology and one on bacteria, their sources and uses in the world. A brief outline of the development and history of bacteriology should be given for the note-books; the two theories of the dark ages of medicine, heterogenesis—that life and disease originated out of nothing, spontaneously, *de novo;* and biogenesis—that all life must proceed from other life, *omne vivum ex vivo,* resulting in fruitless controversy until certain discoveries lifted the veil. In teaching the facts of history, certain facts and names should be made to stand out in brief, bolt outline, and they will be remembered; VanLeenwenhoek, as the father of microscopy; Henle, as the father of the germ theory of disease; Lister, as the father of antiseptic surgery; Pasteur, as the father of modern bacteriology; Koch, as the originator of the laws by which bacteria are determined as the specific causes of diseases. Koch proved for all time the fallacy of heterogenesis and the truth of biogenesis. The work of Pasteur and Koch gave opportunity for the discovery of specific bacteria, and between the years 1879 and 1890 most of the known pathogens were discovered. With the discovery of antitoxin for the control and cure of diphtheria a new era dawned in medicine, and an army of investigators have been evolving the science of immunology and serum-therapy since that time.

2. An outline for the scheme of the study of bacteria in general should be given to be used throughout the entire course.

Bacteria are studied according to

1. Morphology
   - Size.
   - Shape.
   - Arrangement.
   - Appearance.
2. Motility
3. Spore formation
4. Structure
   - Flagella.
   - Capsule.
5. Staining
   - Simple stains.
   - Gram stains.
   - Special stains.
6. Growth on media
   - Bouillon.
   - Agar.
   - Gelatin.
   - Milk.
   - Blood sera.
   - Special media.
7. Conditions for growth
   - Essential.
   - Favorable.
   - Inimical.
8. Chemical products produced
   - Mode of entrance.
   - Morbid processes produced.
9. Pathogenesis for animals and man
   - Modes of exit.
   - Modes of destruction.
   - Immunity.

Such an outline used as a skeleton and filled in for all bacteria studied during the different periods, recorded in note-books, will give data that can always be elaborated for special study and a ready help for reference.

3. The simple technic of laboratory procedures in staining and culturing bacteria, demonstrating their different shapes and arrangements, should be taught. Materials yielding bacteria for smears and cultures should be secured from familiar sources—the dust of the room, exposed instruments, dressings, etc. The keynote of all classwork should be, "See it and do it yourself." Simple stains may be secured through drug stores or made up in the drug room of the hospital. Such media as milk and broth may be made by the nurses. Solid culture media may be secured at small expense from one of the many commercial laboratories.

4. Disinfection and sterilization by chemical and physical means. Technic should be given, and then the reasons demonstrated by cultures, showing perfect and imperfect technic. Stress should be laid on the importance of intelligent procedure. The culture is the detective that reveals the criminal nurse.

5. The sterilization of hands by different methods should be demonstrated by cultures. The proper handling of infectious materials, the collection of specimens for examination, repetition of demonstrations of infectious materials cultured, and methods of disinfection of same cultured, will educate and quicken conscientious service. The important duties of disinfection and sterilization resulting in the destruction of the unseen foes of human health and happiness are worthy of the best efforts of study and practice. To rob motherhood of the terrors of the past, prolong human life, increase human happiness—these are the opportunities for service than which there can be no greater that are thrust on every nurse, and, if she has been well trained in bacteriology and surgical technic, she cannot fail to accomplish the desired results.

6. The examination of milk and water, pasteurization of milk, infections carried by milk and water.

During the second period the pyogenic bacteria should be studied, fitting into the skeleton outline the characteristics, modes of entrance, morbid processes produced, modes of exit, and modes of destruction. Smears should be made of available materials yielding pus, cocci, or slides may be secured through physicians connected with the hospital.

Outlines should be made for the following common pathogens: the tubercle bacillus, pneumococcus, typhoid

bacillus, dysentery bacillus, diphtheria bacillus, Neisser's organism and the *spirochaeta pallida*. A number of diseases infectious in character, but whose specific causes are as yet unknown, are smallpox, rabies, scarlet fever, measles, whooping-cough, mumps, yellow fever. These are being diligently studied by many investigators, and, one by one, will yield their secrets to the causes of education and humanity.

Certain diseases are caused by organisms of animal origin or protozoa. The two most common, malaria and amebic dysentery, should be included. Lectures covering this period may be given by one or more physicians: (1) pyogenic infections; (2) specific infections; (3) infections of unknown cause; (4) protozoan infections.

The third period should cover: immunity; serology; urinalysis; natural and artificial immunity; active and passive immunity (illustrations should be given making the different processes as clear as possible); the preparation of immunizing agents and the administration of each should be explained; the Widal test should be explained, and demonstrated if possible; qualitative urinalysis, showing the simple tests for albumin and sugar; the use of the specific gravity spindle; the reaction to litmus; explanation and demonstration of the microscopic examination of sediment for casts, blood, and pus; the hygiene of the nurse, the sick room, and the patient, on which subject the students should be required to write a short essay in the knowledge of the work covered.

The four lectures following this period should cover: (1) immunity—Ehrlich's theory, the theory of opsonins and phagocytosis; (2) antitoxins, serums, and vaccines, illustrating active and passive immunity produced by them; (3) the Widal test, the Wassermann test; (4) character as developed by the study of bacteriology.

The first three should be given, if possible, by a physician practicing serum therapy; the last by the teacher of the classwork. Such a course should yield a fair and workable knowledge of bacteriology to the nurse from her own standpoint. A reference library including all available text-books for nurses on the subject would prove of great value. The nurse is of great economic value, and hospital training schools are being called on to produce specialists in many fields of endeavor. All of these demand a broader and more systematic study of the various branches relating to nursing. There is no more important subject among them, nor one more far-reaching in its influence on the ultimate success or failure of the character and work of the individual nurse, than bacteriology. It is closely related to many vocations; sanitary engineering; agriculture; domestic science; dairying and cheese-making; preserving, pickling, and canning of foods; the making of vinegar, liquors, and wines, and all the fermentation industries; the manufacture of biological products; the transmission and control of communicable diseases; sanitation, susceptibility, and immunity—all these are based on the principles and practice of bacteriology.

An understanding of the rudiments and underlying principles common to all branches of its study can be fitted into the various special lines, and subjects more strictly limited to commercial interests or to medicine.

I earnestly plead for the practical, but also for the more intelligent and more thorough, understanding of the subject in its relation to nursing. It cannot be accomplished until we are able to secure proper teaching, prepared teachers, a longer period in the curriculum devoted to its study, and the provision of facilities for carrying out the demonstrations and experiments.

SOCIAL HYGIENE
VENEREAL DISEASES

Conducted by WILLIAM F. SNOW, M. D.,
General Secretary, The American Social Hygiene Association.

Please address items of news and inquiries regarding Social Hygiene to the editor of this department, 105 West Fortieth street, New York City.

Clinics for Venereal Diseases—Why We Need Them—How to Develop Them[1]

BY WILLIAM F. SNOW, A. M., M. D., General Secretary The American Social Hygiene Association.

[Concluded from December issue.]

II

If the need for venereal disease clinics and hospital facilities be conceded, the question arises, how may they be developed? This, of course, depends on what they are to accomplish, who the patients are, and what foundation already exists for their establishment. Reverting to the "sanitary axioms" outlined, it may be said that ample warrant exists for spending any amounts of money required either by public or private effort to combat these diseases. The clinic is the complement of the practitioner in the diagnosis and treatment of infected individuals, restoring them to health and efficiency on the one hand, and, on the other, protecting the public through shortening periods of infectivity and lessening the contacts of patients with members of the community. Thus the clinic occupies a strategic position on the battle line midway between the health department and the medical profession. It is undoubtedly true that that clinic which causes the least inconvenience and a minimum demand on the thoughts, efforts, and compliance of individuals will most readily secure patients and be the most successful. It is also true that the lowest unit of cost for the widest benefit to the public should govern the economic rating of the clinic, and that this rating should be frequently checked up by accurate measurement of the results obtained. As yet only a few comprehensive experiments in developing venereal disease clinics have been made. From these the following seem to stand out as essential factors in the success of such clinics:

1. A SPECIALIZED DEPARTMENT OF THE GENERAL DISPENSARY IS A PRESENT NEED

Each dispensary or out-patient department of a hospital which proposes to establish adequate treatment for venereal diseases and render the greatest service to society must correlate the work particularly with that of its genitourinary, gynecological, and dermatological clinics. The administrative plans which have thus far found favor are of two general types—(a) provision for all venereal diseases of men by the genitourinary division and of women by the gynecological division; (b) provision for gonorrheal cases by these divisions, but transfer of syphilis cases to

[1]Read at the eighteenth annual conference of the American Hospital Association, Philadelphia, September 26-29, 1916.

a special division of syphilology or dermatology and syphilology. The haphazard treatment of venereal diseases, especially in their late stages, in whatever clinic the cases may have been discovered, is no longer indorsed, although it is still frequently the practice. Separate venereal disease clinics are practical, but have not been favored in this country. This is due partly to lack of recognition of the social aspects of these diseases, but largely to the necessity for avoiding in either clinic or hospital anything which tends toward publicly distinguishing the patients under treatment for this class of diseases: It is possible that eventually there may be evolved a plan for a separate venereal disease clinic, administered by salaried officers and organized as a major division of the dispensary, but receiving all its patients through nominal registry in the other clinics prior to transfer. Until some such solution is offered, rapid progress cannot be made.

2. ADEQUATE EQUIPMENT AND PERSONNEL ARE ESSENTIAL

It is self-evident that adequate equipment for diagnosis, treatment, and reexamination is essential for efficient work, but this is only slowly being realized in practice. What this equipment should comprise in addition to the consultation rooms, furniture, sterilizing apparatus, dark-field microscope, examination and treatment instruments, and supplies, depends on the extent of cooperation with other clinic divisions, the laboratories, and the hospital in-patient and social service departments. Probably in no other class of diseases is it so important to base the diagnosis, treatment, and discharge on the combined testimony of the patients' history, repeated clinical examination, and the findings of the laboratory. If the pathological and bacteriological laboratories provide their services, and the preliminary history taking is provided by other clinic divisions, the necessary equipment is greatly lessened, especially as to personnel.

3. THE COMMAND OF A NUMBER OF HOSPITAL BEDS IS REQUISITE

The venereal disease clinic ought to have always available as a part of its equipment, or under the direction of its staff, several hospital beds for observation purposes, the temporary care of acutely contagious or urgent surgical cases, and the administration of salvarsan or its substitutes to certain individuals. In some institutions this service can be supplied by the in-patient department in return for services of the venereal disease staff in surgical, ophthalmic, neurologic, or other hospital cases in which syphilis or gonococcus infections are a factor. The hospital is, of course, of minor importance in considering treatment as a general factor in the eradication of venereal diseases, because early diagnosis and ambulatory treatment are the great essentials; but the hospital is of major importance in many individual cases, and is essential in certain cases where removal of a patient from his home is necessary for the protection of others.

4. THE CLINIC MUST ATTRACT PATIENTS AND EARN THEIR RESPECT

If the clinic is to be of service in preventive work, it must secure patients at the beginning of their infection and hold them under treatment until danger from them as active carriers has passed. This means, first, adaptation to the needs of the patients through convenient clinic hours, privacy, and prompt meeting of appointments. Evening clinics particularly are required, attended by a sufficient number of physicians to insure a reasonable equivalent of the personal attention given to patients in private practice. Considering the individual clinic as a unit in the general scheme for combating venereal diseases, it is desirable to study the area which it can advantageously serve, and organize its staff and schedule of hours and fees with due regard to the prevailing nationalities, occupations, social status of residents, and facilities for private practice within that area. Supplementary units, to serve areas or classes of patients, should be encouraged under the same or other management.

5. THE CLINIC MUST HOLD ITS PATIENTS UNTIL TREATMENT IS COMPLETED

The development of practical regulations for determining the progress of treatment and for discharge is a necessity if patients are to be held under treatment. It is equally vital for this purpose that a comprehensive system of follow-up be applied to those cases in which the patient fails to return as instructed. A number of dispensaries have made remarkable progress in this direction.

6. EVERY PATIENT NEEDS EDUCATION CONCERNING HIS DISEASE

Clinic patients should receive full instruction concerning the nature of their diseases and methods of protecting others with whom they associate. The opportunity for this service is commensurate with the time and attention the staff may devote to it. Certain aids are desirable. Appropriate signs, leaflets, and pamphlets have been demonstrated to be of great value. Some dispensaries require printed matter in a dozen languages to be intelligible to all of their patients. The selection of orderlies, social workers, and clinicians who collectively speak the languages the patients know best, and who are required to cooperate in the latter's instruction, is one of the most encouraging of recent developments in this field of preventive medicine. Printed statements especially designed to interest the practitioner should be sent at intervals to every physician in the administrative area, informing him of the facilities of the clinic, its hours, and its plans for cooperation with him.

7. SERVICEABLE RECORDS ARE INDISPENSABLE

Simple and complete records of all cases are necessary for the efficient administration of the clinic, and should be readily available for all proper uses by the health authorities, other dispensary staffs, and others who in the course of any patient's history may become responsible for his treatment or the protection of the public. It is only necessary to read the disheartening report of any one of the recent surveys of venereal disease facilities to be convinced that this most vital factor in clinic efficiency is almost completely ignored in our American institutions. The technical equipment and requirements for recording and filing histories and other data cards have been so simplified that there is no sound argument in defense of continued failure in this part of clinic work.

8. PAY CLINICS AS WELL AS FREE CLINICS ARE DESIRABLE

As a matter of economy and good citizenship, all patients who can pay something toward their treatment should be encouraged to pay. This end seems to have been best promoted thus far without embarrassment to patients by the provision of free and pay clinic hours, and the establishment of advisory consultation offices under independent auspices, such as the health department or a social hygiene society, where individuals may go or be referred for free advice on how to secure proper diagnosis and treatment. The clinic has a great opportunity to work out for venereal diseases the practical methods by which the commonwealth may secure adequate and fair treatment for all infected

individuals of whatever social status, residence, or financial resource.

9. SOCIAL SERVICE AND CLINIC EXTENSION WORK SHOULD BE PROVIDED FOR

Every patient who comes to the clinic offers a starting point for cooperation with a host of social agencies in not only his restoration to physical health, but in his social and moral rehabilitation, which are essential if he is to avoid reinfection and consequently further exposure of the public to the spread of his disease. The social service departments of a few dispensaries and hospitals that have seriously studied this problem have demonstrated this to be a most fertile field for service and for increasing efficiency through reducing abuse of clinic privileges and the frequency of application for treatment. Cooperation, particularly with official departments of health, charities, and corrections along these lines, and in providing convalescent wards and occupations, especially for syphilitics, has presented encouraging possibilities.

As the socialization of medicine proceeds, the work of the dispensary will receive greater emphasis as a factor in health conservation. The venereal disease clinic will then become an administrative center, from which a varied extension service is conducted. Experience shows that the closest cooperation is desirable between the dispensaries and the medical profession. It is possible that gradually the clinic will add to the staff within its area of service a number of private practitioners as associate clinicians, each of whom agrees to advise in their homes or at branch dispensary offices a limited number of clinic patients who are under supervision and require periodic examination and possible return to the clinic for salvarsan or other treatment. In line with this same idea of extension service, it is probable that some plan will be worked out whereby the clinic, for purposes of advice and treatment, may follow the patients to their places of employment in certain industries which do not have a medical director, but whose owners will cooperate in the establishment of this form of field dispensary service.

10. STATE COOPERATION IN THE SUPERVISION AND SUPPORT OF VENEREAL DISEASE CLINICS IS DESIRABLE

Here and there the practical importance of the venereal disease clinic to the public health has so impressed itself on students of preventive medicine that the establishment of such clinics by health departments is advocated, and in a few instances is being tried out. As a substitute proposition, it has been suggested that the health department license all clinics offering treatment for venereal diseases, and require them to maintain a specified standard of efficiency. One such standard has been carefully worked out by the Associated Out-Patient Clinics of a large city. In some form it is probable that public supervision will be established. This will undoubtedly be followed by the demand of dispensary and hospital authorities for public assistance, which should be forthcoming, for there is scarcely room for argument as to the immediate public benefit to be derived from properly conducted clinics for this class of diseases.

Thus may the venereal disease clinic be developed into what has been called "a militant force for prophylaxis." There are now approximately 900 general dispensaries in the United States. The majority of these, in some degree, touch this problem, but less than fifty are at present wholeheartedly and hopefully grappling with it. Statistics, estimates of cost, and accurate data on the experiments now in progress are being slowly gathered for publication,[1] and more clinics may confidently be expected to enter this field of service. If success can be attained in the gradual eradication of syphilis and gonococcus infections—the last among the great plagues of world-wide prevalence which afflict mankind unchallenged—the costs, however great in money, educational effort, and regulation of personal conduct, will be immeasurably exceeded by the gains. Clinicians and hospital directors, in common with public health administrators, have the opportunity to cooperate in a service as great as that of conquering yellow fever and uncinariasis if they but seize this opportunity.

Suggestions About Building a Refrigerator

If you can't have a good, large refrigerator in which to keep sufficient quantities of the perishable foods to enable you to buy advantageously, you can build one for a very little money that will answer the purpose.

Pick out a corner of the basement where you can preempt a small window, put in an extra window and frame, and through the double frame bore a hole with an auger an inch or inch and a half in diameter, fit a piece of tubing or pipe in this hole so that the ventilation can be regulated; when it is hot outside, put a tight-fitting cork in the pipe, to keep the hot air out; when it is cold outside, you can take out the cork, or you can open both sash; fly screening and cheese cloth will keep everything out, including dust.

Now build a double-jacketed box, with this window as a nucleus, of sufficient size to hold the amount of meat or vegetables you will want to keep. Let the three walls go to the ceiling; only first see that there are no hot pipes inclosed. Use 2x4's to make the frame, and board up with clear tongue and groove on both sides after putting a good, heavy layer of building paper, or preferably cork sheeting, on the 2x4's. Make your door of the same material and thickness, and swing with heavy refrigerator strap hinges.

If the floor of the basement is concrete, cut a hole and drain with trap to the sewer somewhere in the neighborhood; if it isn't concrete, get a galvanized iron pan large enough to hold the ice, set this pan on a frame so that the ice will be pretty well up in the box, and connect the bottom of the pan with a pipe to the sewer for drainage. Put up some meat hooks. In the summer you will put in half a dozen to a dozen big cakes of ice, according to the capacity, and as cold weather comes on use less and less ice and more and more outside cold air. All this may seem complicated, but after all it is very simple.

A new annex to the Custer County Hospital, Miles City, Mont., erected to afford accommodations to private patients, will be opened shortly. This department of the hospital has been leased by the Presentation Sisters, and will be under the immediate direction of Sister Mary Joseph, formerly of Aberdeen, S. D. The capacity of the building is 30 beds.

St. Anthony's Hospital, Columbus, Ohio, recently celebrated the twenty-fifth anniversary of its founding. The institution is conducted by the Sisters of St. Francis, and has cared for more than 27,000 patients, including infirm aged.

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[1] It has been impracticable within the limits of this paper to refer specifically to dispensaries, hospitals, health departments, and social hygiene agencies which are trying out the measures suggested, but the American Social Hygiene Association, 105 West Fortieth street, New York city, has printed matter on these points which is distributed on request.

DEPARTMENT OF DIETETICS

Conducted by MISS LULU GRAVES,
Dietitian of Lakeside Hospital, Cleveland, Ohio.

Please address items of news and inquiries regarding Department of Dietetics to the editor of this department, Lakeside Hospital, Cleveland, Ohio.

Dr. Joslin's Paper

For those of us who are interested in dietotherapy, Dr. Joslin's articles are always full of meat. His association with the Department of Theory and Practice of Medicine of the Harvard Medical School, as well as with the Nutrition Laboratory of the Carnegie Institute of Washington in Boston, has afforded him an opportunity to accomplish a very great deal along these lines. His paper published something less than a year ago on the Present-day Treatment and Prognosis in Diabetes was by far the best discussion of the Allen treatment of diabetes that we have read.

This paper, which was read before the American Hospital Association, gives an equally clear perception of the hospital dietary.

Chicago Dietitians Organize

The dietitians of Chicago have formed an organization known as the Dietitians of Chicago. Their object is the discussion of their several problems and other subjects of mutual interest. Miss Perry, of Michael Reese Hospital, is president; Miss Stewart, of Cook County, vice-president; Miss Barber, of the German Hospital, secretary. These three comprise the Program Committee. The third Friday of each month is the date appointed for meetings of this association. We hope we may have frequent reports of what they are doing. A similar organization has been formed in New York, and also one in Cleveland.

There is great need for such cooperation among the dietitians, as they are entering on an entirely new era in the development of their work.

Report of Ohio Home Economics Meeting

The annual meeting of the Ohio Home Economics Association was held in the new Home Economics Building, at Ohio State University, Columbus, Ohio, November 10 and 11, 1916. About 150 people, representing various schools and institutions of the state, attended the meetings.

The meeting opened Friday afternoon with a short business session, presided over by Miss White, of Ohio State University, at which time committees were appointed and general business of the association was attended to. This was followed by two addresses: "Fitting Home Economics Work to Community Needs," by Dean Vivian, College of Agriculture, Ohio State University; and "Application of Home Economics to Present Situation in Germany," by Sarah T. Barrows, assistant professor of German, Ohio State University. This was followed by a tea and an inspection of the new Home Economics Building.

Saturday morning a short business session was held, after which the meeting divided into two sections: Institutional Section, with Miss Lulu Graves, Lakeside Hospital, Cleveland, as chairman; and Public School Section, with Miss Edna White, of Ohio State University, as chairman. An address, "Present Status of Dietitians' Work in Ohio," by Dr. J. H. J. Upham, member of the State Board of Examiners, was given in the Institutional Section, and a general discussion followed. The following officers of the Institutional Section were elected for next year: president, Miss Graves, Lakeside Hospital, Cleveland; vice-president, Miss Deaver, Christ Hospital, Cincinnati; and secretary-treasurer, Miss Skinner, Ohio State University. A committee was appointed to formulate recommendations to be presented to the State Board of Examiners regarding the status of the work of dietitians in the state.

The plans for the Institutional Section of this meeting were not begun until about a month before the date of the meeting. A program was arranged and correspondence conducted which resulted in an attendance beyond expectations and a most gratifying enthusiasm. Dr. Upham's paper was very much appreciated. He presented four problems for discussion which the State Board of Examiners is trying to solve in establishing a proper status for the hospital dietitian, and asked for suggestions to be sent to the board. A committee appointed to act on this suggestion is now at work outlining some of the difficulties of hospital dietitians and suggesting ways in which the cooperation of the board would be welcome. These invitations, coming from the State University and the State Board of Examiners, together with their cordial cooperation, give the dietitians of Ohio a great deal of pleasure. In one state, at least, dietitians have the satisfaction of believing that their efforts are being recognized.

The Hospital Dietary[1]

ELLIOTT P. JOSLIN, Boston.

As I read your program and recognized the names of well-known specialists in hospital management, it was with much diffidence that I ventured to record any opinions of a member of the staff about the hospital dietary. This feeling gained force while my paper took form, because most of the points which I planned to make were criticisms of hospital diets. But when I came to consider closely the dietary of several of our Boston hospitals, to my gratification, though also somewhat to my embarrassment, I found that most of the suggestions contemplated were already in use and the criticisms about to be proposed were no longer applicable. It may, however, do you no harm, you who usually receive complaints of the hospital dietary, to hear various qualities in it held up to commendation.

The food in the hospital dietary should be abundant, plain, simply prepared, inexpensive, not susceptible to waste, and of such a character that it can be easily digested. These attributes are axiomatic, but I expect that your committee on hospital standardization will not find it easy to settle the caloric value of the diet, though the data which they accumulate will be most valuable. Of course the experience in other institutions than hospitals will be very helpful, and I anticipate that the present

[1]Read before the eighteenth annual conference of the American Hospital Association, Philadelphia, September 26-29, 1916.

European crisis will furnish data far more useful than any hitherto obtained.

Simplicity in a hospital diet is important because false ideas as to the character of the food necessary for health should not be encouraged in patients. Neither should methods of cooking be employed which are impossible of imitation in small dwellings. The necessity for an inexpensive diet and one not susceptible to waste need not be emphasized before this body, but it will be appropriate to combat a common impression that food should be excessively simple or really of a nature of soft solids to be digestible. In reality, the digestion of most people is admirable, and any suitably cooked food is well borne. One of the best proofs of this is the absence of indigestion among diabetic patients under the former plan of forced feeding or the present low diet. All these qualifications of the general hospital dietary I found existed at one of the Boston hospitals, and undoubtedly are more universal than I supposed.

Especially to be commended was the variety of the food offered the patients, possibly an inheritance of Dr. Howard's plan of rotating the standard portions of the diet in some other number of days than seven.

Stews and boiled meats rightly figured prominently in the menus. Meats so prepared are to be commended because they are soft and do not require good teeth. Furthermore, stews and boiled meats can be kept hot and moist far more easily than roasts, can be served with vegetables and simple condiments, and thus made especially appetizing. Stews abolish the need of soups. Incidentally, such methods lessen waste in the cooking and serving. I deprecate the use of thin broths; they could be quite as attractive and of some nutritive value if thickened. They set a bad example to the patient.

The opportunity of the coast cities to utilize fish freely is appreciated. Since meat, fish, and eggs are not given the patient at night, there remain but fourteen other meals a week, and of those fourteen meals I noted that at least four contained fish as a basis. It is not to be wondered at that protein in a leguminous form figured quite as frequently in the diet as the Boston public would be expected to demand.

The early light hospital suppers do more to give the cardiac patients good nights than they or their physicians suspect. The increased use of fruit now in the hospital diet, as contrasted with former times, reflects the general tendency of the community and is especially appropriate. The discriminations shown by the hospital authorities in the selection of vegetables was gratifying. Thus, at no time in the course of several weeks did I detect that more than one white vegetable was served at a meal. Potato, rice, or macaroni was invariably combined with one of the coarser or green vegetables. Cabbage might be more freely employed, especially in surgical cases. Of course the whole success of its use would lie in the way it was prepared. Why not use cabbage instead of bran and cathartics? It would seem as if bananas might be used more. There is no more waste to a banana than to an egg. The caloric value is high. If suitably prepared, the banana is easily digested. It affords variety; it has a moral value. Did you ever know an individual to commence a banana that he did not finish it? It is an easy way to introduce sugar and milk or cream into the diet. To the uninitiated, ripe olives do not appear expensive if purchased in bulk.

The hospital diet is designed to cure the patient. Even more than rest, it constitutes the chief therapeutic agent.

SPECIAL DIETS

These must be the bane of the hospital dietitian's life. Each succeeding group of physicians devises a new "special diet." Such originality should be discouraged. Often these diets differ very slightly from one another, and much labor might be spared if yearly they were revised by common agreement of the medical and surgical staffs. The dates of the revisions should be printed on the diet slips. Perhaps these special diets do not deserve as much attention, for, as a matter of fact, the day is coming, even if it has not arrived, in which we shall see the passing of the standard special diet. Its place is being taken by the universal adoption of individualistic prescribing of food.

INDIVIDUAL PORTIONS—THE PASSING OF STANDARD SPECIAL DIETS

Already we hear less and less of the nephritic diet, the diabetic diet, the typhoid diet, the obesity diet, the low-protein and low-salt diet, and the gastric ulcer diet, but more and more of how many calories, how much protein, carbohydrate, fat, the patient should receive. There is no such thing as a diabetic diet and no such thing as an obesity diet. We speak of a hyperacidity diet, but no part of the hospital diet should be such that it would cause hyperacidity. The size, age, and special requirements of each patient must be considered, as well as whether he is abed or up and dressed. Such a plan involves extra help, more dietitians, better training of nurses, but the education of the community is progressing. Almost anyone now, even if he has not a mechanical bent, can run an automobile, and almost any modern nurse ought to be able to put mental as well as physical energy into the selection and serving of her patients' dinner. The extra help required in arranging the diets will be more than offset by the saving of food and the shortening of the stay of the patient in the hospital.

COMPLAINTS WITH THE HOSPITAL DIETARY

Fault is frequently found with the diet. I doubt if there is any exaggeration in the statement that, if such complaints were sifted, it would be found that 90 percent related to the methods of serving the food after it left the kitchen. If Dr. Howard's dictum of "let the 'hots' be hot and the 'colds' be cold" were followed, most complaints would vanish. Too much pains cannot be taken in the serving of the food. Even hot, deliciously cooked roast beef provokes no favorable response if served dry. The fact that it is not the quantity or the quality of the food which provokes criticism, but rather the method in which it is served, should ever be borne in mind. In private hospitals this is still more important. Sometimes it seems as if the nurses had received no instruction in serving the food. Private patients resent this bitterly, for the waitresses in their homes are often quite neat and deft in their methods. Do you, as hospital superintendents, realize, as you live sumptuously at Bellevue-Stratfords wherever you go, that some of your nurses may not have been so fortunate or not have been accustomed to such dainty methods of service?

COST AND WASTE

The problem of cost and waste may be divided into two branches—that connected with the food before it has reached the kitchen and that connected with its preparation and until it has left the kitchen. It would be unwise for me to attempt here to express any opinion about the former, but as to the latter I feel less reticence. The return tray of a diabetic patient is a model in dietetic economy. If any of you have looked at the trays returned

from diabetic patients, you will see that the problem of waste is eliminated, for these patients eat everything given them. Indeed, they will eat all the salt in the salt cellar if allowed to do so. If there is no waste in the diabetic diet after it reaches the patient, why should there be in any other diet? Of course it must be granted that these patients, under modern conditions, are often underfed, but I do not believe that this by any means accounts for the whole story. The more important fact is that they are served with great care, and no more food given than is required. In other words, diabetic individualism is carried to the extreme. This involves increased labor on the part of someone, but I believe that the amount of food saved would more than compensate for the extra wages expended. With the increased cost of food, this individualistic feeding will come soon. The fact that the custom is growing of serving individual portions of food to the help shows this tendency. So far as waste in a diet is concerned, however, there is little question that the experiences now being acquired in the European war will furnish us much of value, and lessons of this character will mitigate the many losses which now seem irreparable.

A second measure which will reduce the cost of the hospital dietary and cost per patient is the suitable grouping of similar cases. I cannot conceive how a hospital can persist in having typhoid patients scattered throughout all the medical wards when these might be grouped together in a few rooms. Nor can I understand how diabetic patients can be allowed to remain under the care of many nurses, who may have only one case a year to treat, when these might be grouped under the ready supervision of a single nurse. I have had a wide opportunity of observing the two methods, both in private and in public hospitals. The easy way in which the diabetic dietetic problem is handled in a private hospital, where the responsibility for the diet rests on one nurse, with nurses serving under her for periods of three months, compared with the management of a much smaller number of diabetic patients in another hospital where frequently the nurses have never had a diabetic case under their care, daily forces this on me.

Finally, the prevention of waste should be stimulated in patients. Patients should be taught economic habits in dealing with food. They should not be allowed to see food wasted. Too much praise cannot be given to nurses who are careful to conserve the food supply. The active interest of the staff should be frequently invoked.

The third means of reducing the cost of the food supply you are already seeking by your committee on hospital standardization. I wish I could hear the report of that committee. Surely it will be most edifying. But it should be applicable in greatest measure to the smaller hospitals. The large hospitals—hospitals towns, almost cities you might call them—existing in the large cities can afford experts on hospital efficiency, but the little hospitals cannot, and your committee should do this work for them. Just as soon as the smaller hospitals have put before them the cost of food per patient, then they will be in a position to judge whether they are properly conserving their resources. The government has standardized railroad accounts, and your committee should do the same for hospitals.

"EDUCATIONAL ASPECTS"

The educational aspects of the dietary in a hospital deserve attention. From the administrative point of view first, all emphasis should be laid on the necessity for the better training of dietitians. Too often, when changes are made in the hospital, dietetic staff months are lost because the new incumbent lacks experience. Dietitians should have a period of service in hospitals quite the same as medical students and house officers. It is quite as essential for dietitians to have practical experience, and to bear responsibility under supervision in the arrangement of diets, as it is for house officers to be given training and responsibility in the care of patients.

Nurses are already given courses in dietetics, but the need for more instruction is daily apparent, because treatment in hospitals more and more is based on quantitative variations in the diet. Experience alone will enable nurses to carry out orders properly. Nurses may know more about diets than the older physicians, but they do not, as a rule, know more than the present younger group of doctors. All nurses working in institutions should have demonstrated to them the necessity for the avoidance of waste. They should see a garbage inspection, and be shown in this way how useful they can be to their institution. In order to familiarize them with the caloric value of foods, each nurse's dining room should have a "calorie" table, and a group of nurses should be assigned to it for a week and calculate the values of the foods they eat. The students adopted this plan at their lunch room in the Harvard Medical School with profit. Practical instruction of this type is interesting, stimulating, and costs nothing.

Students require more instruction in dietetics than they now receive. It is for the interest of hospitals to encourage their interest in patients' diets, to encourage their asking questions, and to bring out their criticisms. Students will talk when house officers are afraid to express opinions. By this means many old-fashioned notions will be eliminated from the dietary. They, too, should see a garbage inspection.

Finally, the hospital staff should have presented to it in brief form each year some of the important administrative problems which come up to the superintendent, and foremost among these is the dietetic problem. Is not the staff perhaps too often told not to do this or that, whereas, if assembled in a body and their reasons for innovation proposed were set forth, its sympathy with new methods would be easily gained? It is easier to lead than to drive.

Most of all, the patients require instruction in the diet. No patient should go out of the hospital without having had explained in one way or another the advantages of the diet given. His stay in the hospital should be a course in hygiene. With most cases this would be in the nature of an explanation of how to procure simple foods at low cost, but with others detailed instruction should be given. The subject should not be left until the last day, but the important points of diet should be systematically taught throughout his stay. Medicines are easy to take, but the reasons for special diets are easily forgotten. If a patient requires a diet for constipation, he should be given such a diet in the hospital, and its character should be explained so many times that he will not forget it. The diets for patients with diseases of the stomach and intestines are not complicated, but the reasons for their peculiarities are often not appreciated. With diabetes, diet, except in very mild cases, is everything, and in this disease the stay of the patient in the hospital is almost exclusively for the purpose of being taught dietetics. The whole aim in the modern treatment of diabetes is not to render the urine sugar-free, but rather to so instruct the patient that he can keep it so when at home. In the treatment of diabetes, not only the patient, but the relatives, must receive instruction, for they will care for the patient later on. Patients learn readily, and children more so than adults. Indeed, in the kitchen at the Deaconess Hospital more

than one little girl has acquired the art of cooking, and I always feel comparatively safe in sending home a 12-year-old child on a diet, because I am quite sure it will be followed. This instruction of patients' relatives is not a new procedure, for the standard rules in your out-patient departments for the feeding of children are not only specific, but designed to instruct the mother as well. Furthermore, I was interested to see that the directions for stomach cases in the out-patient department of the Massachusetts General Hospital contain few specific statements about diet, but such excellent general advice that, if followed, indigestion must disappear.

The diet of each diabetic patient is prescribed in simple terms, and not uncommonly 50 to 100 words cover all the orders given a patient for a three weeks' stay. Even these are written in abbreviations. The problem is simplified because diabetic patients eat chiefly eggs, meat, bacon, fish, oil, cream, and groups of vegetables containing 5, 10, and 15 percent carbohydrate. How very simple the matter is will be seen by inspecting one of the daily charts. These charts are simply large blocks of newspaper paper, and it will be seen that the diet for 10 patients for two meals occupies very little space. The charts hang in the kitchen, and Miss Smith, who is in charge of this portion of the hospital, usually weighs out the food herself, and the two nurses who aid her in the care of the 17 patients, with the help of the patients, distribute the trays. With each tray goes a little card, specifying the amounts of the various foods served. At the end of the day these cards are collected, the amounts of the various foods are added together by the patient, and the content of carbohydrate, protein, and fat reckoned. New nurses find it complicated, and so do new patients, but I do not remember a 12-year-old child who has been unable to reckon up its diet. In fact, usually the children are used as teachers of the newcomers, and it is sometimes quite amusing to see a 12-year-old child teaching a patient of 60. It does no harm for the patients to reckon up their diets each day in the hospital, although it may be unnecessary for them to do it outside, for one tries to avoid later weighing of the food.

Patients are welcomed in the kitchen on invitation, are deliberately exposed to temptation, and special arrangements are made to have patients' relatives come to the hospital to learn how to prepare the food. To lessen cost, patients' services must be utilized. Europe will teach us many lessons in this regard. I hope for a diabetic patients' vegetable, not flower, garden. A few nurses have spent a week, paying their own board, and volunteering their services at the hospital for the knowledge gained. They have an opportunity of seeing the cases, and of learning how to arrange their diets, test their urines, and how to make these patients comfortable while going through the treatment. By seeing a group of patients, nurses cease to be afraid to carry out rigid treatment with individuals. Then, too, they usually see some cases who are doing quite well, have an opportunity to see cases who have been under treatment for several years, and by this means are encouraged to persist in the rigorous treatment of severe cases, to which they are usually sent. As you are aware, the demand for good diabetic nurses considerably exceeds the supply, and it is a type of work peculiarly attractive to a nurse who has a scientific bent, enjoys accuracy, and likes to exercise her mind.

COOPERATION

Cooperation in hospitals between superintendents, nurses, and the medical, surgical, and pathological staffs, should be more intimate. Too often the horizon of each has been limited by his own department. The same practice rules elsewhere—in fact, is universal—because it is human nature, but lessons in cooperation are now being taught the world on every side. We must not be behind in this movement. You have kindly asked me to speak to you instead of listening to you, but I shall not forget to reverse the status, and our medical societies will gain in the exchange.

The Chemical Composition of Commercial Glucose and Its Digestibility

BY DR. J. A. WESENER, AND PROFESSOR G. L. TELLER, of the Columbus Laboratories, Chicago, Ill.

[Continued from the December issue.]

To determine on the nature of carbohydrates in glucose, the authors have recently made a long series of fermentation tests, using compressed yeast of the kind commonly employed by bakers for the making of bread. These experiments were made under conditions suitable for collecting the gas and determining the relative amount of fermentable sugars present by the quantity of gas produced. Where the work is carefully done, very concordant results can be obtained. In these experiments it was found that a certain amount of glucose is always fermented and a still larger amount is not fermentable until it has been converted into some other form of carbohydrates by the use of diastase, either from malt extract or from some other source. In some series of experiments, gas was obtained on the original glucose equivalent of 28 to 33 percent, calculated as cane sugar. When, however, the glucose was treated with malt extract, or with other diastases such as we know to be instrumental in the digestion of glucose and other starchy products in the body, a very marked increase of the amount of fermentable sugars was obtained.

Where yeast acts upon pure cane sugar and upon pure dextrose, the amount of gas produced during the fermentation with like quantities of the same compressed yeast is closely proportional to the amount of sugar present. Some things have been found in our experiments which have shown that where certain starches, or starch products, are acted upon by malt and the result of the mashing is subjected to fermentation, a larger quantity of gas will be obtained than is directly proportional to the amount of sugar which we should expect to be produced from the starch present; thus, in treating with malt extract the prepared starch known as mazam, a considerably larger proportion of gas is obtained than we should expect from the amount of starch used, assuming that the usual amount of dextrose was eventually obtained from the starch by the combined influence of the malt extract and the maltase secreted by the yeast itself. Mazam is a starchy preparation obtained by hydrolyzing starch much the same as by gelatinizing it with boiling water, except that in the mazam the starch is subsequently dried and flaked. The amount of gas produced from the dry starch present in mazam has been found in several experiments to correspond to as high as 122 to 128 percent of the starch used, calculating on the basis of pure dextrose, to which the starch must be eventually converted before fermentation.

As is well known, most of the cereal foods—corn meal, Quaker Oats, rice, Cream of Wheat, etc.—and materials baked from them, like bread, are rich in carbohydrates, which consist almost wholly of starch. To show a comparison between the carbohydrates of these several foods and glucose, they were mashed with malt extract as de-

scribed above and subsequently fermented. First a complete analysis of the foodstuffs was made and the amount of carbohydrates determined in the usual manner (by difference), after subtracting from the total weight of material the amounts of moisture, ash, protein, fat, and crude fiber. Then the same quantity of each material was mashed at a temperature of 50° C. for two hours with a properly prepared solution of cold water extract of malt, cooled to the proper temperature, 15 grams of yeast added, and the gas resulting from the fermentation collected and measured. The corn meal, Quaker Oats, rice, and Cream of Wheat were well cooked, probably more thoroughly than they would ordinarily be as prepared for consumption on the table. The Corn Flakes and Shredded Wheat are breakfast foods prepared for immediate consumption and required no further cooking. Irish and sweet potatoes were baked in the usual manner and the edible portion carefully dried at a low temperature and powdered. The same was done with the white bread.

The results of these experiments are given in table I,

TABLE I. GAS PRODUCED BY FERMENTING MALTED CARBOHYDRATES OF CEREAL FOODS COMPARED WITH MALTED GLUCOSE

	Percent total carbohydrates	C.c. gas for 5 grams of material	C.c. gas for 5 grams carbohydrates in material
Corn meal, well cooked	78.67	920	1170
Quaker Oats, well cooked	66.55	760	1143
Rice, well cooked	76.30	870	1140
Cream of Wheat, well cooked	75.50	880	1165
Corn Flakes	81.52	840	1043
Shredded Wheat	75.25	780	1030
Baked potatoes, dried	86.30	945	1095
White bread, Vienna, dried	75.70	840	1110
White bread, Pullman, dried	75.40	820	1090
Bran bread, dried	78.56	640	815
Glucose	80.00	880	1100

together with the amount of carbohydrates found on analysis and the total gas calculated to 5 grams of dry carbohydrates. It will be seen that the results obtained from glucose compare favorably with those obtained from several cereal foods and potatoes used, indicating that the dry matter of glucose yields substantially as much food material as many of these cereal foods, especially when allowance is made for the increased sugar content due to the hydration of the starch of the cereal foods.

A comparison was made in the fermentation of a number of the starches digested with malt extract, similar to that made on cereal foods. Here, as in the case of mazam, there is a quantity of gas produced in excess of what we would expect to find when we consider the amount of sugars which should normally be produced from the starches by hydrolysis. This is true of all the starches in this comparison, except in the case of rice starch, in which the gas is, for some reason, less.

TABLE II. GAS PRODUCED BY FERMENTING VARIOUS STARCHES WITH YEAST[1]

	Total gas produced, c.c.	Gas, corrected for that from malt extract	Gas equivalent to cane sugar, percent
Malt extract	220	.....	.....
Wheat starch	1280	1060	103.9
Rice starch	1180	960	95.1
Corn starch	1270	1050	102.9
Potato starch	1300	1080	105.8
Glucose (solids, 82.1 percent)	1060	840	82.3
Cane sugar (5 grams)	1020	.....	.....

Compiled analyses of a large number of malted liquors, including ale, porter, stout, beer, etc., show that in all cases there is a quantity of reducing sugars left in the malted liquor after the fermentation has been completed. This fermentation often extends over a considerable period of time, generally amounting to several weeks. The original wort used for fermentation presumably contains in the neighborhood of 12 to 13 percent of extracted matter. After fermentation a greater or less quantity of unfermented matter still remains, which is grouped together under the general name of extractives. The average amount of unfermented reducing sugars, calculated as maltose, approximates close to 1.5 percent, as is shown in table III.

TABLE III. UNFERMENTED PRODUCTS IN MALT LIQUORS

Liquor	No. of analyses	Percent extract	Reducing sugars as maltose	Dextrins	Reducing sugars percent of total extract
Ale	44	5.59	1.07	1.81	17.8
Porter (Stout)	44	7.97	2.06	3.08	25.8
Weiss beer	33	5.29	1.56	.....	29.9

One-half ounce per quart equals 1.5 percent. While this is not large when taken upon the liquor itself, it still is sufficient to amount to about 0.5 ounce per quart of malt liquor, and, when calculated upon the total extractive matter, it is from 18 to 30 percent of the amount present.

Malted liquors are recognized and often highly extolled as valuable sources of food, and yet it is seen that a considerable part of the extractive matter which they contain consists of unfermented reducing sugars, of which a considerable part has not progressed to the stage of maltose in the changes which take place between starch and fermentable sugars. It is well recognized that the processes of digestion are more active and energetic as they take place in the body than they can be when they are carried on outside. A considerable number of enzymes have been isolated from the alimentary tract. We do not know to what extent others may be present, but there is evidence to show that all, or nearly all, of the carbohydrates present in glucose are assimilated and used by the body.

We have found from our own experiments, especially those with pancreatin and with malt extract, that the amount of unfermented reducing sugars is not greater where these diastases have been acting upon glucose in connection with yeast than they are where these combined have been acting upon the various starches, and this in spite of the fact that there was originally in the glucose a large proportion of apparently unfermentable reducing sugars already present. We have also found in several experiments that this proportion of apparently unfermentable reducing sugars is largely decreased and in some instances almost entirely removed by the combined action of yeast and taka-diastase, pancreatin, and to a less extent with malt extract. It must be borne in mind, however, in this connection, that while these reducing sugars ordinarily present in the glucose are being removed, other apparently unfermentable reducing sugars are simultaneously produced. It is apparent, therefore, that the material which has been classed as gallisin, or an unfermentable sugar in glucose, yields to fermentation when it is acted upon by proper diastases. In this respect it is like similar products produced by the action of diastases, the result of a step in the conversion of starch to maltose. If it so happened that a greater number of the yeasts which are used for fermentation were of those species which do not secrete maltase, we might conclude that maltose also is an unfermentable sugar. Since the reverse is true, it is not so classed.

[To be continued.]

[1]Starches fermented with yeast after boiling thoroughly in water, then digesting at 45° C. for two hours with cold water extract of malt; 5 grams starch or glucose, 50 c.c. malt extract, 15 grams yeast.

A new general hospital has been opened at Oroville, Wash., with Mr. and Mrs. W. T. Reary in charge.

PREVENTION OF BLINDNESS
MATERNITY

Conducted by CAROLYN CONANT VAN BLARCOM, R. N.,
Secretary of the Illinois Society for the Prevention of Blindness;
Chairman of Committee on Social Hygiene of the
American Nurses' Association.

Please address items of news and inquiries regarding Prevention of Blindness—Maternity to the editor of this department, 30 North Michigan Boulevard, Chicago.

ILLINOIS SOCIETY FOR THE PREVENTION OF BLINDNESS

* * *

First Report of the Society for the Eight Months from March 1 to October 31, 1916

In the state of Illinois there are between 2,000 and 3,000 needlessly blinded persons. These babies, children, and adults might be seeing today had their eyes been given proper care when their sight was first endangered. Most of this blindness is due to failure on the part of the accoucheur to drop into the baby's eyes, as soon as it was born, two drops of a simple remedy (nitrate of silver, 1 percent, which the state furnishes free) or failure to give adequate treatment when the eyes became sore.

Organized efforts in Illinois to prevent needless blindness was inaugurated when the Illinois Society for the Prevention of Blindness took offices in Chicago, at 30 North Michigan boulevard, on March 1, 1916. Prior to this date, however, valuable work had been carried on informally for some five or six years by a group of volunteers, comprised of both physicians and laymen, which became known as the "Illinois Association for the Conservation of Vision and Prevention of Blindness." This association concerned itself chiefly with educational work relating to the causes of blindness and methods of prevention; it also supported the admirable bill for the prevention of blindness in babies which became effective July 1, 1915.[1]

The work of the association was given a definite impulse in the spring of 1915, when the late Mr. Bryan Lathrop accepted the presidency. As a result of Mr. Lathrop's deep sympathy for those stricken with blindness and his eagerness to prevent needless loss of sight, a full-time secretary was engaged March 1, 1916, to organize and develop a state-wide movement for the prevention of blindness. At this time offices were opened, the name of the organization was shortened to the "Illinois Society for the Prevention of Blindness," and plans for sustained organized work were formulated. The constitution and by-laws were adopted, a charter obtained, an advisory council created, and to date 813 members have been enrolled, whose aggregate annual dues and contributions amount to $4,589.89.

[1]Revised statutes of Illinois, 1915, chapter 38, page 975. An Act entitled, "An Act for the Prevention of Blindness from Ophthalmia Neonatorum, Defining Ophthalmia Neonatorum; Designating Certain Powers and Duties and Otherwise Providing for the Enforcement of this Act." This law requires that all physicians and midwives shall advise the use of "such prophylactic as shall be prescribed by the State Board of Health" (nitrate of silver, 1 percent) in the eyes of all babies immediately after birth, and also that physicians, nurses, midwives, and parents shall report all cases of babies' sore eyes of which they have knowledge to the local health authorities within six hours from the time the symptoms are first observed.

BABIES' SORE EYES

Recognizing the fact that babies' sore eyes, a preventable and curable eye disease of early infancy, is the most prolific cause of needless blindness, the society has bent its early endeavors toward the eradication of this disease. To this end an effort has been made to secure a more general observance of the reporting law above referred to, and to give wide publicity to the tragic importance of caring for babies' eyes.

PROSECUTIONS.—Thirty-two violations of this reporting law have been discovered. One doctor and two midwives have already been convicted and fined, and the attorney-general has handed down authorization for the prosecution of three doctors and four midwives. Evidence is still being collected in 9 cases, while the remaining 13 cannot be carried to completion in court for a variety of reasons, a common one being the unwillingness of the babies' parents to appear against the offending accoucheur.

The practical value of bringing delinquent doctors and midwives into court in these circumstances is being demonstrated even at this early date by the amazing increase in the number of cases of babies' sore eyes reported to the Chicago Department of Health. Whereas there were but 19 cases reported during the six months from May 1 to October 31, 1915, there were 86 cases reported during the same period in 1916—or more than four times as many have been brought to official attention since it has been made known that failure to report leads to unpleasant consequences.

FOLLOW-UP WORK.—Through the courtesy of the Department of Health this society has been enabled to follow up each reported case and make sure that the baby was being given adequate treatment. Not a single case of blindness resulted. Among the cases reported by doctors it was found in some instances that the baby was being properly cared for and no assistance was desired or needed; in others the doctor felt that the assistance of a visiting nurse would greatly increase the chances of saving the baby from blindness, and still others were glad to have the society arrange for treatment, either in a hospital or dispensary, as the home conditions made proper care practically impossible.

A total of 146 cases has been referred to this society from various sources, including those from the Department of Health. Unhappily, this number suggests what *might* be done by an adequate staff for babies in Chicago alone, rather than the number actually cared for, since it has not been possible to make visits in all of these instances. Three of the babies included in this number are known to be totally blind, while six others are blind in one eye. And these tragedies have followed in the wake of a preventable and curable disease within a stone's throw of hospitals where they might have been averted.

One young mother, holding her blind baby in her arms, said quite simply that the baby's eyes might have been treated just as well as not. But this was her first baby, and the midwife and the grandmothers, from the fullness of their knowledge of such things, assured her that "it was only a cold in the eyes," "it was natural for babies to have sore eyes," and "that they would get well by themselves." The baby will pay the penalty of lifelong blindness, while the mother aches with the knowledge that this need not have been.

Most mothers need only be told of the blindness threatening their babies, to be stirred to action. Singularly enough, however, it is sometimes necessary for the state to step in and protect its infant citizens from the destructive effects of parental neglect. In one such case referred

to this society the parents removed a baby, for whom blindness was imminent, from Cook County Hospital against the advice and warnings of both doctors and nurses. The mother was visited in her home, shown photographs of blind children and explained the seriousness of her own baby's condition. In the end, however, in order

Fig. 1. This blindness need not have been. The doctor in attendance did not use preventive drops at birth and treatment was not secured for the inflamed eyes until too late. Because of blindness, this baby was abandoned at Cook County Hospital by its parents.

to secure the treatment required to save this baby from blindness, it was necessary to swear out warrants for the arrest of both parents and place them under bonds of $500 each. The result is a baby with two clear, unscarred eyes instead of another candidate for the school for the blind.

In four other cases the society had to resort to similar measures in protecting the baby against its parents, with the difference that in the latter instances, after all else had failed, the threat of arrest accomplished the desired results. Unfortunately, one of these four babies lost the sight of one eye while efforts were being made to convince the parents of the gravity of the situation.

In one case, after several hours had been consumed in offering one persuasive argument after another, the resisting parents were completely won over by the prospect of a taxi ride—and so at 9 o'clock at night the entire family contented and happy, reached Cook County Hospital, accompanied by the society's agent, bearing the suffering baby. It was finally discharged cured, a possible productive citizen instead of another state charge.

Sometimes the price paid by a baby for the ignorance and neglect of those accountable for its care is not alone its sight. Blind babies are not regarded as valuable assets, and accordingly are not infrequently abandoned by the parents who are responsible for their blindness. Nor do one-eyed babies always find favor in the sight of their parents, for each year a number of these handicapped victims are left at Cook County Hospital and never claimed by their families.

MISCELLANEOUS CASES

While, as has been stated, the society's early efforts have been to save babies from going blind, it has been of assistance, in addition, to a school boy, a girl of 20, and a man of 38. The school boy was referred to the society at the close of the school year by a principal who realized that an interruption of the medical supervision, which had been possible during the school term, would doubtless result in serious injury to the boy's vision, and who did not know what else to do. It was found that the Visiting Nurse Association would willingly supervise the care of the boy's eyes during the summer vacation. The girl had been virtually blind during the twenty years of her life, her sightlessness having been accepted as inevitable and incurable. She was referred to this society, and it was discovered that she had congenital cataracts and might be greatly relieved by surgical treatment. The family was persuaded to allow the necessary operations, with the result that the girl today has fairly useful vision after twenty years of blindness. The man in question was facing extreme poverty because of the effect of his failing

Fig. 2. Needlessly blind for life. She is a pupil at the Illinois State School for the Blind because her eyes were neglected at birth. Twenty-nine percent of the pupils in this school are blind for the same cause.

vision on his earning capacity. The corrective treatment which it was possible to secure for him was of definite and practical value.

While we know full well that many school boys suffering from chronic eye infections, girls with congenital cataracts, and men with failing vision are being helped constantly without the aid of the Society for the Prevention of Blindness, the facts are that these three individuals did not know just where to turn in their need, and so appealed

to a society whose sole object was known to be that of saving sight. These three cases and the blind babies exemplify the same fact—that people are going partially or totally blind within easy access of medical care because they do not know just what they should do, or fail to appreciate what can be done to aid them.

Widespread education, then, is apparently the foundation on which all work for the prevention of blindness must rest, whether babies, children, or adults are to be helped.

THE COST OF NEEDLESS BLINDNESS TO THE STATE

The average cost to the state to maintain and educate a blind person is estimated at something over $10,000. This does not take into account the negative loss of productive citizens—the state's most valuable asset.

Illinois is well to the fore in its legal provisions for the safeguarding of infant eyesight. The Legislature makes an annual appropriation to the State Department of Health to make possible the gratuitous distribution of prophylactic outfits to physicians and midwives; it requires that babies' sore eyes be reported to local health authorities, and there are many hospitals and dispensaries, maintained at public expense, for the treatment of eye diseases. And yet 27 of the 46 blind children in Chicago's public schools are blind because they did not get the benefit of these provisions, and 29 percent of the pupils in the State School for the Blind at Jacksonville are blind for the same reason. Quite evidently the state's provisions are not accomplishing all that they might in the prevention of infantile blindness. The urgent need at present is to secure for the babies throughout the state the preventive and remedial treatment which are free to all. This requires public education.

DON'T LET YOUR BABY GO BLIND
Which One Can't It Be
ILLINOIS SOCIETY FOR THE PREVENTION OF BLINDNESS
If he put DROPS in the BABY'S EYES
DON'T NEGLECT YOUR BABY'S EYES
DON'T USE Milk, Lard, Lemon Juice or Camomile Tea
To SAVE the BABY from being BLIND ALL ITS LIFE
BABIES' SORE EYES IS A DANGEROUS DISEASE
ONLY A DOCTOR SHOULD TREAT BABIES' SORE EYES

Fig. 3. This exhibit is designed to arrest the attention of those who need the warning concerning babies' eyes, and the intention is to show it in such places as settlements, club rooms, and various public meetings. The panels measure 30 inches by 40 inches each, and are in black, white, and gold, and four colors, while the illustrations are photographs and colored hand drawings. Replicas are being prepared on sensitized cloth, which may be sent by parcel post for use in various parts of the state.

About 20 out of every 1,000 newborn babies have sore eyes, and from 5 to 8 of these infections are serious enough to result in injury if not given adequate medical treatment. This injury may be only a slight impairment of vision, due to a small scar, or it may be total blindness. There are approximately 156,000 births in Illinois each year, of which 63,500 occur in Chicago. Accordingly, there are annually in this state about 3,180 babies, including 1,270 in Chicago, who face possible blindness, and only a small percentage of these are brought to treatment. The majority get well without treatment, but there is no way of distinguishing, before it is too late, between those who will and those who will not recover, for a baby may go blind within forty-eight hours from the time the first sign of inflammation appears.

A few who suffer injury because of lack of care find their way in time to the State School for the Blind, some are kept out of sight by their families, some of the partially blind are discovered in the public schools through medical inspection, while the majority struggle through life as best they can with their varying degrees of handicap. It is scarcely necessary to comment on the importance to the state of having all cases of babies' sore eyes given prompt and adequate treatment.

The five babies which this society was directly responsible for saving from blindness would ultimately have cost the state upward of $50,000. But the known number of individuals saved by any organization for the prevention of blindness represents but a small part of those actually saved from blindness, since care is secured for many unknown cases as a result of education. The real saving to the state, then, of both money and useful citizens, will follow in the wake of widespread and sustained publicity.

PUBLICITY

With the hope of dispelling the ignorance which is the underlying cause of so much blindness, the society has started an educational campaign, which, to be effective, must be carried on, not through a season nor for a year, but persistently and unremittingly until citizens of Illinois shall cease to go blind from neglect. This publicity is to be carried on through the distribution of illustrated leaflets printed in several languages, lectures and addresses before all kinds of audiences, the use of lantern slides and photographic exhibits, the aid of the press, and by repeated warnings sounded by doctors, nurses, and social workers.

LEAFLETS.—The society's first educational leaflet is an illustrated four-page folder entitled, "Directions for the Prevention of Blindness from Babies' Sore Eyes." This is written in simple language and published in Yiddish, Italian, Bohemian, Polish, Lithuanian, and English. It is being distributed by social service workers, visiting nurses, infant welfare nurses, and from settlements, churches, and community centers throughout the city. Moreover, it has been reprinted in full in Chicago papers published in the above-mentioned languages, thus reaching a very large number of women who are likely to be attended by careless physicians and midwives. With slight modifications, this publication No. 1 has been reprinted by the North Carolina Society for the Prevention of Blindness for use in that state, while the New Jersey Commission for the Blind made an appropriation to purchase several thousand copies in all six languages for use in New Jersey.

A total of 120,000 leaflets has been issued (20,000 in each of the six languages) and 30,000 have been distributed, and 34,000 folders and circular letters have been circulated for the purpose of making known to the public the existence and objects of the society.

The lay press of Chicago and throughout the state has

given immeasurable assistance in this educational campaign, while information concerning the purpose of the society's work has appeared in a number of medical and sociological publications, such as the *Journal of the American Medical Association, The Survey, American Journal of Public Health,* and the bulletins of the state and city departments of health.

LECTURES AND ADDRESSES.—There has been such prompt recognition of the importance of publicity in connection with this work that even during these early months of the society's work the secretary has spoken before two committees of the Woman's City Club, the Chicago Woman's Club, the Chicago Medical Women's Club, the Lincoln Center Mothers' Club, supervisors of the Visiting Nurse Association, the Twenty-fourth Ward Civic League, 600 girls at St. Mary's High School, the Independent German American Women's Club, the Chicago Commons Woman's Club, an evening congregation of the Julia Gay Memorial Baptist Church, the Chicago Ophthalmological Society, two classes at the Chicago School of Civics and Philanthropy, and the Loyola University School of Sociology.

The society is fortunate in having secured the volunteer assistance of Mrs. Gregor Skolnik, who will speak on the care of the eyes before various groups of foreigners—Russians, Poles, and Bohemians—in their own tongues. The society hopes in time to be able to provide lecturers in other foreign languages which are widely used in Chicago.

LANTERN SLIDES AND EXHIBITS.—As illustrated talks are apt to be more impressive and lasting in their effects, the society has two sets of lantern slides, each numbering forty-five slides, for use by its speakers. Photographic exhibits also are valuable aids in public health educational work. The society has accordingly prepared an exhibit on the subject of babies' sore eyes. Before its own exhibit was completed the society secured a photographic exhibit from the New York Committee on Prevention of Blindness for display during Baby Week at the Boston Store, June 16 to 23, 1916, and also the Galesburg District Fair, August 5 to 12, 1916.

COOPERATION

Cooperation spells success in prevention of blindness work, since it cannot be successfully prosecuted by any one organization working alone. Accordingly the society is deeply appreciative of the generous and effective cooperation which has been extended by a number of official and nonofficial bodies. Particularly valuable has been the assistance given by state and city boards of health. The former, at the request of its executive officer, Dr. C. St. Clair Drake, has appointed the secretary of this society as a special agent to assist in enforcing the law for the prevention of blindness among babies, and it is due to the effective work done jointly by the state and city departments of health that the delinquent physicians and midwives previously referred to have been brought to justice.

The Cook County Hospital and the Illinois Charitable Eye and Ear Infirmary have given very practical aid to the society from the beginning of its work. The Subscriptions Investigating Committee of the Chicago Association of Commerce has placed the stamp of its approval on this work, and relations of cooperation have been established with the Committee on Conservation of Vision of the American Medical Association, State Charities Commission, Cook County Board of Commissioners, Chicago Ophthalmological Society, Visiting Nurse Association, Infant Welfare Society, Chicago Woman's Club, Women's City Club, Illinois Parent Teacher Association, City Bureau of Public Welfare, County Bureau of Social Service, Illinois Committee on Social Legislation, the Better Community Conference, church community centers, and settlements and social service departments throughout the city. A large number of the clergy, Catholic, Protestant, and Jewish, have aided the society by referring to its objects from their pulpits and in the church publications, while too much cannot be said in appreciation of the interest and helpfulness of the medical profession.

The Chicago Woman's Club has created a Committee on the Prevention of Blindness for the purpose of forwarding the movement in this state to save human beings from needless blindness.

FORECAST

A report on the activities of so young a society must, of necessity, be less a record of achievement than an indication of what may be done by a firmly established organization. What has been accomplished by an almost unknown society, because of the effective assistance of both official and unofficial bodies and particularly the strong support of the medical profession, augurs well for a successful campaign in Illinois for the prevention of needless blindness. It is the immediate purpose of the society to continue its educational work and its effort to enforce that law to prevent infant blindness, while its general program is:

1. To work for the complete eradication of that scourge known as babies' sore eyes by employment of the methods previously described.
2. To work for the training, licensure, and control of midwives by state authority. (It is in great measure due to the ignorance and neglect on the part of these women that many babies go blind).
3. To aid in the conservation of the eyesight of school children by securing for all schools thorough medical inspection, adequate lighting, lusterless blackboards and desk tops, provision for furnishing eye glasses at little or no cost to indigent children, and special classes for children with seriously impaired vision.
4. To cooperate with the United States Public Health Service in fighting trachoma throughout the state.
5. To strive for better lighting conditions generally in public buildings and conveyances, in schools, factories, and the home, and to do away with the causes of eye strain so far as possible.
6. To promote the safeguarding of eyesight in the industries by more general use of protective devices, such as goggles, guards, screens, etc., and adequate lighting.
7. To try to put an end to the misuse of wood alcohol, a poison which may cause blindness or death if swallowed, or inhaled in an inadequately ventilated place. Wood alcohol in any form or container should be labeled poison, and its use forbidden in beverages, medicines, and toilet preparations.

In short, it is the purpose of the society to work toward the objects as conceived by its first president, Mr. Bryan Lathrop—namely: "To reduce physical and mental suffering, financial loss, and burdens on the community resulting from destruction or impairment of eyesight."

CAROLYN CONANT VAN BLARCOM, Secretary.

The Medical Aid Fraternity, an organization formed at Tampa, Fla., a year ago, with the object of affording needed medical or hospital care to members for a nominal monthly fee, has built up a membership of 1,800 and is now arranging for a hospital of its own. A twenty-two-room building has been acquired and is being remodeled for the accommodation of patients. The officers of the fraternity are laymen. Dr. J. L. Efird is medical director.

THE MODERN SANATORIUM

Conducted by ALBERT WARREN FERRIS, A.M., M.D.,
Saratoga Springs, New York.

Please address items of news and inquiries regarding The Modern Sanatorium to the editor of this department, Saratoga Springs, New York.

The Prime Importance of Diet

"Moderation is the best temperance;
Temperance the best diet;
Diet is the best doctor."

A lesson of prime significance and value which is learned at the sanatorium is that of dietetics. No one agency is more important in sickness or in health than the choice of food, its preparation, its variation, and its amount. A French physiologist described man as a digestive tube, with arrangements for locomotion and guidance. A better conception is to regard man as a cerebrospinal complex—a rational, intellectual, and spiritual organism—provided with a system of nourishment, digestive, circulatory, and emunctory, and furnished with apparatus for locomotion, self-protection, and the preservation of the species through the marvelous expression of resident forces.

Life consists of a succession of cycles of growth, nutrition, exercise of function, and decay, disordered or terminated only by disease or injury; and the invasion of morbific agencies may be classed with the entrance of a bullet into the tissues as an injury, without the exercise of much transference of signification.

Errors of diet are responsible for by far the most incidences of disease. Without distinction of phrase, the homely proverb, "Most people dig their graves with their teeth," communicates to us the truth that multitudes shorten their lives and gallop to their tombs through overeating and eating improper food. The term "food" must of necessity and for convenience include also drink, since the only excuse for drink is that it has, or is alleged to have, value in repairing, or reconstructing, or furnishing energy, either in its own form or when catalyzed, or in new combination. We very properly include blood in the tissue group; and we must certainly class water as of equal importance with food, though unable to take its place. Water constitutes 60 percent by weight of the body. It not only forms the bulk of all the numerous fluids of the body, but it forms part of the bulk of living bone, nerves, teeth, nails, and skin, as well as muscle and fatty tissue. Dr. Solis-Cohen says, "The cells of the body are aquatic in their habit." Indeed, they are composed largely of water, and are constantly bathed in it. Its supreme importance will be easily appreciated on contemplation of its functions in connection with the lungs, liver, digestive organs, skin, and kidneys. Of the water taken into the body and manufactured within it, 20 percent is eliminated with the breath, 30 percent by the skin and cutaneous perspiration, 4 percent with the waste from the digestive tract, and 46 percent in the urine.

There is no more imperative demand made by nature than that of thirst. The average man needs six to eight glasses of water daily, in order that chemical reactions may be facilitated, that substances may pass in solution from one part of the organism to another, and that the solid excreted substances may be carried off. Water differs, therefore, from all real foods in its action and function, and deserves much attention. Its chemical constituents may vary within wide limits. It is of prime importance that there should be calcium carbonate in it, not only for flavor, but also in order that better bone and muscle may be built in those who drink it.

The choice of the factors in a successful diet deserves grave consideration. There are those among people of culture and education, people who have had the benefit of study and travel, who retain enough medieval fatalism to claim that the best guide to a choice of food is the appetite. Their claim is that what one desires to eat is good for him. These are words of delusion, unless strongly qualified; for, by a parity of reasoning, repeated potations of liquor are good for the drunkard; a diet of candy is good for small children; chalk and slatepencils are good for the chlorotic girl. To him who says, "Let us eat and drink, for tomorrow we die," our answer will be, "Yes, you will die tomorrow, or perhaps tonight, if you abandon yourself to the vagaries of your untutored appetite." The palate is not an infallible guide to the capabilities of the digestive organs.

To quote from Armstrong, who liberally translates Professor Charles Bouchard, "Man is living constantly under the chance of being poisoned; he is always working toward his own destruction, his own suicide, by intoxication due to products he creates within his own body." The overtaxing of vital organs by improper food, the introduction of harmful flora into the intestine in certain foods, the production and retention in the colon of harmful acids that are absorbed to attack the lining membrane of the heart and blood vessels—all these conditions, occurring ofttimes through ignorance, can be corrected by the use of a proper diet.

So, then, dietetics is a science consisting of knowledge of the chemistry of food, of the nature of waste and repair of tissue, and of the action of digestive organs, and is in no respect founded on the caprice of the sense of taste, or the traditions current among high livers.

Water has received mention, and may be dismissed from further consideration with a glance at the earthy salts. The latter form about 6 percent of the body weight, being very abundant in the bones and the teeth, much less so in all the other tissues as well as the fluids in the body. They comprise phosphate of calcium, and various compounds of potassium, sodium, magnesium, and iron. They are absolutely necessary to life and health, for they play an important part in the metabolic processes, maintain osmosis, and are essential to nervous and muscular reaction. They are taken into the body with various foods, largely in vegetables.

The value of a food is stated in calories. A calorie is the amount of heat required to raise the temperature of one kilo of water 1 degree Centigrade; in other words, to raise the temperature of a pound of water 4 degrees Fahrenheit. This unit, the calorie, is adopted for convenience, because all food is burned up in the body, and the amount of heat produced is in about the same ratio as the amount of other energy produced from a given food when oxidized. The nutritive values of foodstuffs is, to repeat, stated in calories.

Various totals of food are essential in different occu-

pations, the tailor requiring many fewer calories than the stonemason or the ditcher, the draughtsman many less than the lumberman. In ordinary daily life and in prescribing diets in disease, a simple classification of the compounds of the chemic elements in the food is adopted. We group the constituents under the headings of proteids, carbohydrates, and fats; and a varying and proper daily amount of these compounds, meeting the various tissue requirements, is called a balanced ration.

Proteids rebuild tissue and form blood; fats and carbohydrates produce heat and support energy. Proteids are found in large quantities in all flesh and meats, fish, eggs, liver, and other viscera, chicken and game, milk and cheese, as well as in peas, beans, and lentils. Fats comprise butter, all animal suets, drippings, etc., and likewise vegetable oils; although there is not a parallel nutritive value between vegetable oils and animal fats. Carbohydrates comprise the starches, dextrin, sugars, and the acids of certain fruits and vegetables.

Until recent times it was thought that man was a carnivorous animal. A good many points were strained to demonstrate the alleged truth of the statement from the style of his canine teeth and the acidity of his stomach juices. But it was necessary to fall back on the appetite for meat, and the traditions of high living, when he could afford to pay for it. Carl Voit, of Munich, set the figures for the intake of animal food after averaging the meat consumption of a great number of men of average health. His dictum was that the man of average body weight of 70 to 75 kilos (154 to 165 pounds), doing moderate physical work, requires daily 118 grams of proteid food (including meat, eggs, milk, fish, lobster, brains, kidney), of which 105 grams should be absorbable, 56 grams of fat, and 500 grams of carbohydrate, with a total fuel value of over 3,000 calories, in order to maintain the body in equilibrium. This Voit standard has been commonly accepted for many years. Our own Atwater, formerly of Wesleyan University, after many observations on the dietetic habits of different classes of people and people under different conditions of life, has stated that as liberal a daily allowance of proteid as 125 grams would seem desirable. On the other hand, experimental work and observations during the past few years have suggested the possibility that the real physiological needs of the body may be met by a much lower standard of diet. Professor Chittenden, of Yale University, was led to doubt the almost universal belief in the efficacy of a rich and abundant diet to strengthen the body and increase bodily and mental vigor. He has ascribed this belief to generations of high living. Everyone agrees that proteid decomposition products are a constant menace to the well-being of the body. The liver and kidneys are under constant strain in their efforts to rid the body of the nitrogenous products resulting from an excess of proteid foods. In addition, there is danger to the tissues from intestinal putrefaction and toxemia, should the body lose its ability to digest and absorb the excess of food consumed. Acting on his convictions, Professor Chittenden instituted a series of very instructive experiments, planned so as to show whether body equilibrium and nitrogen equilibrium can be maintained for months or years on a low proteid diet, vigor being unabated and proper resistance to disease being secured. He pursued a series of experiments on each of three types or classes of individuals, whom he describes as follows: 1, a group of five professors and instructors in Yale University, mental workers, and not active muscularly; 2, a detail of thirteen men from the hospital corps of the United States army, moderate workers, who, in addition to routine daily duty, took a vigorous amount of systematic gymnasium work daily; 3, a group of eight young trained athletes, students in the university, some with exceptional records in competitions. Gradually reducing the amount of albuminous or proteid food taken each day, in the course of a month or two he had put his professional men on a diet which supplied but 5 to 9 grams of nitrogen a day, against 16 to 18 demanded by the Voit standard, without loss of mental or physical strength or vigor, and with maintenance of body and nitrogen equilibrium. The tests of the members of the hospital corps resulted in the conclusion that 50 or 60 grams of proteids sufficed, without increasing the amount of nonnitrogenous food. The men were conscious of less fatigue than formerly, and of an improved muscular condition. But the most striking results were reached in the cases of the members of the athlete group, some of whom, while on the restricted diet, won places in competitions, and all of whom improved in muscular ability. No deterioration of any kind occurred.

Naturally, because it antagonizes desire, and because it is an innovation, the Chittenden standard was attacked by many, and is not yet universally accepted. But a similar standard has been in use in Battle Creek Sanitarium for years with success and great satisfaction to the patients, adapted, of course, to individual conditions. The danger of a too great proteid diet lies in the fact that in meats, liver, fish, sweetbreads, etc., there occur dangerous poisons which are all very difficult of excretion; in fact, are prone to retention in certain conditions and diseases. These are the purins. The purins embrace our old friend uric acid, xanthin, hypoxanthin, adenin, and guanin; and they are just as dangerous as their difficult names suggest.

The amount of protein food needed is ascertained in the case of any individual by observing the nitrogen equilibrium. The amount of nitrogen utilized in the body and excreted in the urine should very nearly correspond with the amount of it which is ingested as food. Exercise, of course, governs the total amount of food required, more being utilized by the active individual; but exercise has little effect on the proteid metabolism. Some of Chittenden's squads and a vast number of vigorous people who followed the Chittenden ideas maintain health and strength on more food, but a small proportion of proteid.

Carbohydrates and fats save the protein naturally incorporated in the tissues of the body, and help to maintain the nitrogen equilibrium. Friedenwald tells us that Voit's standard included 56 grams of fat and 500 of carbohydrates daily; Playfair's English standard, respectively, 51 and 531 grams; while Gautier in France suggested 65 of fat and 437 of carbohydrates.

A careful study of many thousand cases leads Dr. Kellogg, chief of Battle Creek Sanitarium, to give the following figures, which, we see, allow a reasonable margin of variation: average daily requirement of protein, 160 to 300 calories; of fats, 500 to 900 calories; of carbohydrates, 1,000 to 1,800 calories.

Our principal problem, therefore, is not to devise ways and means of repairing individuals who are damaged by the poisonous derivatives of large quantities of animal food, but to teach the uninformed or self-indulgent of the dangers of the old *menu* of the trencherman or of the *bon vivant*, and of the absolute sufficiency for health, growth, and muscular power of a dietary embracing very little animal flesh, or one eliminating altogether meat, fish, fowl, viscera, and entrails, and retaining only eggs, butter, milk, cream, and cheese of the animal foods.

Even such a superficial and cursory view as this of the subject of dietetics cannot fail to impress one with the im-

portance to the sanatorium patient of the science in its application to his individual case. It is important not only to the invalid, but also to the thoughtful person who wishes to avoid becoming an invalid, or to the citizen whose efficiency has been reduced, and whose enjoyment of existence has become impaired by "food poisoning"—that is to say, by the action of harmful acids generated in the digestive tract, and not excreted by the overworked liver or kidneys.

The modern sanatorium furnishes a guide and turns the light on the danger signals for the one who desires to avoid disease, while for the impaired or the invalid it prescribes the food suited to his needs. Herein is a great opportunity for the adoption of a satisfactory method of serving food. Usually the patient is furnished with a list of "thou shalt nots," which become onerous and irritating, as he reads over a largely forbidden bill of fare, with his printed commandments in his other hand. In Vichy, France, the list of allowables and forbidden articles is sent to the chef of the hotel or guest house, who sees to it that, while nothing forbidden is placed on his table, the patient has permissibles tastefully and attractively served, and varied from meal to meal within the limits set by the physician through the dietitian. So should the modern sanatorium interest the patient and avoid the necessity of repeated denial, with the irritation corollary.

ALBERT WARREN FERRIS.

The Service of Interns

A hospital that does not know what to do with interns, and how to get medical and surgical service out of them, should not have the good fortune to get them. There is no other service in the hospital so important as that of the clinical care of patients under the orders of the visiting staff, and there are two ways to get this service—one by employing young ex-interns and paying them substantial salaries, or by having interns. The tremendous cut in the number of medical schools recently and the higher standards for medical students have resulted in smaller graduating classes, and consequently fewer young medical men eligible for hospital service. At the same time, the number of hospitals has grown tremendously, and the service that interns may expect in a hospital has been fairly well standardized. It is not a service akin to that formerly performed by orderlies or men nurses, nor is it a service that calls for menial work.

Nearly every medical school is a participant in a nation-wide plan to standardize hospitals for intern purposes, and these standards call for certain training for interns, including an adequate laboratory of pathology, a proper dietary, proper medical and surgical attention to the sick on the part of the staff, which will enable the interns to get something in exchange for their time and services.

Hospitals had better make up their minds whether they are going to pay house doctors or whether they are going to set their hospitals in order so that they may attract interns. They are going to have to do one or the other.

Miss Beulah Watkins, an experienced nurse, has purchased the Montrose Hospital, Montrose, Col. Associated with Miss Watkins in the conduct of the institution will be a brother, P. Watkins, and the latter's wife, until recently connected with a sanatorium at Wichita, Kan. Miss Minnie Isensee, who has been in charge of the Montrose Hospital for the last two years, retires on account of illness.

QUERIES AND ANSWERS

Method of Overcoming Bulging of Linoleum

To the Editor of THE MODERN HOSPITAL:

Can you tell me the best method of overcoming bulging in linoleum? We have much trouble with ours, and I wish to overcome it if possible.

SUPERINTENDENT MIDDLE WESTERN HOSPITAL.

Hot, humid weather always has a tendency to expand linoleum and make it bulge, if it has not been cemented to the floor. Possibly this is the reason in your case. The best method is to loosen one side and let the linoleum be flattened by walking over it; then, when cooler weather comes, it can be retrimmed and cemented. About one gallon of cement will be required to each ten or twelve square yards, more being required if the linoleum is cemented, with a felt paper lining under it. This lining is unnecessary and increases the expense. The cost depends on the price of the cement used. These cements are furnished by the people who sell linoleum.

Use Too Much Paint

To the Editor of THE MODERN HOSPITAL:

We are trying to keep our hospital looking clean and neat, and we use a great deal of paint. We find that the lower part of the walls get soiled or stained or scratched while the upper part and the ceiling remain clean, or can be cleaned with soap and water. Can you suggest any treatment by which we can keep the lower walls clean longer?

A MATRON.

It would be unwise, as it would be architecturally inexpedient, to use in the private rooms and wards, tile walls or any other surface that would not stain or scratch, and you cannot help having the lower part of the walls stain and scratch. Obviously, then, the thing to do is to reduce the amount of surface to be painted at these frequent intervals.

The best way to do this is to divide your walls by a dado and a frieze. You can have the dado of ½-inch by 3-inch finish rail, running at a height of 4 or 5 feet, and you can have a picture molding at 9 or 18 inches below the ceiling. But picture moldings have gone out of date in hospitals and the wood dado is unnecessary. It is preferable to use stencils in both places. These can be very simple in form, and can be bought by the yard at any wallpaper store, or they may be as elaborate as you like.

Then you can have three colors of paint—say, a deep olive-green between the dado and the baseboard, a lighter green between the dado and the frieze, and a cream above the frieze and for the ceiling; or you can make the same combinations in gray or terra cotta or any other colors.

With your walls treated in this way you can paint the small amount of wall space below the dado as frequently as you like, and this amount of space will be very small because of the interruption by doors, windows, and radiators; indeed, the amount of paint necessary is so small

that the patient need not be removed from even a small private room while the operation proceeds.

Then you can go on washing your walls above the dado and the ceiling, and at long intervals renew the paint on them. By this method it will not be necessary for you to match paints exactly and the whole effect is a pleasing one.

Salaries in Hospitals

To the Editor of THE MODERN HOSPITAL:

Have you a book that tells about all the hospitals in the United States, salaries of officers, including private, state, and city hospitals? The price of the one to which I refer is $1 or $2. A STATE HOSPITAL.

There is no published schedule of salaries of hospital officers in the United States, and we do not know of any place where such a list is to be had; on the contrary, we are quite sure that the information you are seeking is not available except in rare instances.

Hospital superintendents get all the way from $75 per month up to $10,000 per year, depending on so many conditions that they cannot even be enumerated. Assistant superintendents get all the way from nothing (the training being considered equivalent to a salary) up to $6,000 per year. Other salaries in the hospital are quite as far from being standardized except in the nursing department, where head nurses and department heads are generally paid sufficiently high salaries to win competent nurses out of the "private practice" field, and those salaries generally run from $75 up to about $125.

Wages of the commoner hospital employees vary a good deal with locality and with conditions of business. Just now, while our wages are running from $20 to $35 per month and board for both men and women, we are finding ourselves obliged to accept quite inferior service, since the best people are finding more remunerative employment in other lines.

Too Many "Extras"

To the Editor of THE MODERN HOSPITAL:

We are having a great many complaints from paying patients about extra charges. We charge extra for pathological x-ray work, and there are extra charges for unusually expensive medicines and for articles of food not on the menu. It is a fact that sometimes a patient, occupying a $12 bed, may have extra charges that make the bill foot up to $25 or $30, and occasionally even more. But when the doctor orders the things, we have to supply them, and they must be paid for somehow. The doctors quarrel with us about these extras, as well as the patients; but what are we to do about it, since we have no endowment? A PERPLEXED SUPERINTENDENT.

It seems to us that patients have a perfect right to complain who have arranged for their accommodation in the hospital at, say, $12 per week and then find their bill mounting up to $25 or $30; all the explaining that you can do is not going to set these patients' minds at rest about so obvious an injustice. You do not differ from thousands of other hospitals in this country in having extra charges; but the whole system is wrong, and until the system is righted the complaints are going to come.

Of course, the way to do is to have one charge for each bed in the hospital, and include in that charge every item that the doctor may order. Some patients will not need any extras at all, and others will need only inexpensive ones. There is an average somewhere for these extra charges, and the proportion of this average ought to be set against each bed. Suppose, for instance, you have 100 patients, and the total amount of the extras charged in the course of the average week is $500; and suppose your income for the average week from your 100 patients is $1,500; the extra charges would amount to one-third of the total charges against patients, which would be 33 1-3 percent.

Why not, then, increase your rates by 33 1-3 percent, so that when patients apply for admission they can be told exactly what the week's charges are to be, and they can be told also that there are no extras?

From long experience we have found that this is a far more satisfactory way to deal with the matter. It is not the amount of the extra charges, very frequently, that annoys patients, but the fact that, while they thought their bill was to be a certain sum, they find it has been raised on them without their knowledge or consent, and, unless the hospital puts the blame on the doctor for giving the extra orders, the hospital will be held to blame; and if the hospital blames the doctor, it will very soon get into trouble for disloyalty and unethical conduct.

At the outset of such an innovation the doctors ought to be told about it and the reasons ought to be explained to them. As a rule, they are reasonable men and will appreciate the advantages of such a system.

An Economical Power Plant

To the Editor of THE MODERN HOSPITAL.

I note in your magazine that you were kind enough to make suggestions regarding the construction and equipment of hospitals. I am building a small hospital, or rather I have purchased a residence about 50 by 60 feet, three stories high, and to this I am making an addition 37 by 74 feet, three stories high. I purpose, provided it is best, heating the building with steam; in fact, the residence is already equipped with steam. There are three heating problems: first, steam for the building; second, steam for the sterilizers, bed-pan sterilizers, etc.; third, hot water for the fixtures, including the operating room. I can accommodate about 30 patients and the house staff will probably include twenty, so that I have to provide for about fifty people. The building will be furnished with both gas and electricity. If you could kindly make me some suggestions along the line of the best solution of these problems, I will appreciate it. I must consider economy in construction and especially economy in maintenance.

I am greatly pleased with THE MODERN HOSPITAL, and especially with the information in regard to the construction, maintenance and management of hospitals.

NORTH CAROLINA.

This problem was submitted to Mr. Meyer J. Sturm, the hospital architect, of Chicago, who replies as follows:

It is somewhat difficult to answer your inquiry in detail, inasmuch as the information that you give is of a general character. The remodeling of the residence is, however, comparatively a simple matter, as it is taken for granted that you will use the greater part of this building for your administration and the housing of the staff. This would leave the new addition, which you contemplate erecting, entirely for hospital services for your patients and for your operating department.

You state that you must consider economy in construction, and especially economy in maintenance. Let me call your attention to the fact that, while the two are to some extent correlated, the matter of economy of construction is practically fixed, whereas the economy of maintenance is purely and simply one of the interrelation between your departments and the economical arrangement of all of these departments and their equipment, so that your maintenance cost can be brought to a minimum.

The expenditure of comparatively small amounts in the construction, especially so in the installation of the apparatus necessary, often means the saving of these addi-

tional amounts in less than a year in the saving on the maintenance charge, and I would advise that before you start your addition, or even the remodeling of your present residence, you give the fullest thought to this part of the work.

For the purpose of heating your building, it is advisable to use steam, adopting one of the vapor-vacuum systems for this purpose, and to lay out your plant for this heating, and for the running of your sterilizers and the supplying of your domestic hot water for your fixtures, as follows: Your hospital being too small for a complete high-pressure system for your requirements, I advise that you use for your heating one of the sectional cast-iron boilers, or a fire-box tubular boiler if you have the room for it, and, for your high-pressure work and the heating of your domestic hot water supply, a small upright submerged tube high-pressure boiler, carrying from 75 to 80 pounds pressure, connecting with this directly to all of your sterilizers and such cooking apparatus as will be run by steam.

From this high-pressure boiler a line should be taken to your apparatus requiring high pressure, and also to your hot water tank, with the proper temperature control on the latter, so that when the water in the tank is at the temperature required, it will automatically close off the steam from the boiler. Your tank should be large enough for sufficient storage, so that when the high-pressure boiler is not running during the night, you will have sufficient water to carry you through until such time as the boiler is run at capacity. There should be a cross-connection made with a reducing valve between your heating lines and this high-pressure boiler with the proper valves, so that at any time when necessity demands, or in the early spring and late fall, when only a small amount of heat is required for a short space of time to take off the chill, this can be done without the necessity of running two fires in a day of this kind.

All of this heating and high-pressure work should be very carefully laid out and your radiators and all of your piping properly proportioned, for in this way you will have not only an economical installation, but a very economical plant in operation.

In laying out your plumbing the same care should be exercised in having an economical arrangement carefully considered as to location for any future additions which you may wish to put on to the new unit without the increase in this part of your building. The same may also be said of the layout of the electric work. In all of these branches—namely, the heating, plumbing, and electric work—as well as in the general construction of your building, provision should be made for any future additions, and all of the arrangements so made that an increase in the size will be adequately served without the necessity of duplicating such portions as can be put in at the present time. These provisions in the initial cost of your present unit will be practically negligible, but will undoubtedly effect a considerable saving in future units, and will enable you to avoid the annoyance and expense of remodeling in the present building to fit future conditions.

Lumbered-Up Operating Rooms

To the Editor of THE MODERN HOSPITAL:

Some of our surgeons complain that the operating rooms are too full of furniture, and that they do not have room enough to do their work. They say also that the nurses cannot give quick, snappy service because they must dodge about the furniture. These doctors are right, too, but it seems that each surgeon wants something different, and, when we try to please them all, we seem not to please any. What are we to do about it?

A SURGICAL NURSE.

The only way out of your difficulty is to call your surgeons together, explain the trouble to them, and insist on their establishing a definite and detailed operating room technic, including the items of furniture that are to be in the operating room. Tell them at this conference just what the trouble is and how it comes about, and that, while you are trying to please each one, you are succeeding in pleasing none of them. If the surgeons cannot agree on a technic under which their work is to be done, how can they expect the hospital administrative officer to solve the problem? It will be best to begin by demanding of them a set of rules for the operating department, including various steps in the technic. This will bring up operating room furniture, the make-up of trays for the different classical operations, the preparation and use of dressings and materials, the giving of the anesthetics, and so on. The surgeons ought to dictate in all these matters, because that is a part of their work, and the success of their work will depend on proper technic; but you cannot train your nurses and interns and you cannot have discipline unless you do have a definite surgical technic in all its branches.

Too Many Visitors

To the Editor of THE MODERN HOSPITAL:

We are having much trouble about the number of visitors to patients; indeed, our doctors say we let in so many visitors and allow them to stay so long that the patients become exhausted, and that, instead of being benefited by visits of their friends, they are really harmed. But we have no way to regulate the matter, as the nurses say they have not the time to "police" visitors. Can THE MODERN HOSPITAL suggest a remedy?

A MUNICIPAL HOSPITAL.

The control of visitors should be at the visitor's entrance; the nurses have enough to do to attend to the nursing of patients. Since you have been allowing everybody to go up to see patients when they come, there will be an awful row when you attempt to change the system; but it ought to be changed because the doctors are right. It does do patients a great deal of harm to have so many visitors. We all know, too, that it is the habit of visitors to wander about the hospital when they are permitted to do so, and it not infrequently happens that visitors make remarks to patients whom they do not know about how bad they look, and they are likely to say something that will at least by inference give a sick person to understand that he or she is just about to pass away.

The cure is to have a card system at the door. Some of the celluloid goods manufacturers make up for hospitals a regular visiting board. Under the name of each patient in the room or ward is a tiny pocket about ½ inch by 2½ inches long, and in which pocket should be a card, preferably printed with the simple words, "visitor's card," and the monitor of the visitors will write on the card the name of the patient in whose pocket it belongs. Then, when a visitor comes to see—let us say, Jennie Jones—he will be given one of these cards. Presently along comes another visitor and gets the other card. The third visitor who comes will be told that there are already two visitors upstairs, and that no more can go up until one or both return the card to the pocket. On the reverse of this little card will be printed these words, "Visitors will return this card to the office desk. No other visitors can see your friend until this is done." This process seems

complex in the telling, but it is indeed very simple and by it visitors can be handled perfectly.

Charges Between Departments

To the Editor of THE MODERN HOSPITAL:

I have charge of the kitchen and dining rooms, planning and preparation of meals, patients' clothing, laundry, sewing room, mattress makers' and tailors' shops.

We have at the present time some 600 patients. We employ quite a good deal of patient labor in all of the departments. At the present time I am working on a new system of bookkeeping for the workshops—namely, seamstress', tailors, and mattress makers' departments.

As it is now, in our seamstress department we charge seamstress with goods requisitioned from store, and then put a price on finished article before it is requisitioned out for use on the wards. For example, she uses six yards of lace for one pair of curtains at 40 cents a yard, and for curtains made up she is allowed $3.15 per pair. This system makes the seamstress department pay, but it makes the maintenance charges for the wards very high.

I would be pleased if you could suggest to me any system so that our maintenance charges will not be so high.

A STATE HOSPITAL.

From your letter we cannot see where you are to improve on your method of charging your goods sent to the various occupational departments; indeed, it seems clear that there can be only one way of handling these accounts, and that is to have each department charged the actual cost if goods are to be used in the institution itself, as, for instance, the curtains for the wards; and if the goods are to be sold outside, there should be added by each department a reasonable profit.

In the case that you mention in your letter, where the curtains were requisitioned by the seamstress department, then made up and sent to the wards, the wards should certainly be charged with the actual cost, because, if they had not been able to get them from you, they would have had to go outside and get them. If you charged them more than they could buy them for elsewhere, then there must be some fault in your department, because you are working with free labor and ought certainly to be able to compete with mercantile houses, which have to pay for making these things. The wards themselves have no way of making money, and undoubtedly appropriations are drawn on to pay the expense of maintenance of patients. If the hospital cannot furnish things in competition with commercial houses, then you should have some other basis on which to compute the value of your work. We can easily see that the profit might be charged against the welfare of patients, in which case the appropriations would have to be called on to pay the deficit, and in that case the work would be curative and the charge would go against the treatment of patients.

The public—that is, the officials of the province—ought not to expect that your occupation bureau will be self-sustaining. We have got by that a long time ago, and the modern idea is to give occupation to patients in insane hospitals because it will do them good and not because it is profitable, and only in rare cases can such a department pay. For instance, in the Colony for the Chronic Incurable Insane at Gardner, Mass., the patients make mattresses for all other state institutions, and that department is profitable because the colony raises its own sheep, weaves its own cloth, and makes ticking out of that cloth. In some cases the colony goes to New York and buys cotton ticking, and is allowed a reasonable profit from the other institutions, and is allowed also a reasonable profit for the work of making up the mattresses. They raise their own geese, and make pillows and bolsters out of the feathers, and they make a profit both on the feathers and on the ticking, and on the work of making them up. The colony also buys good lumber and makes furniture for other institutions, and makes a profit out of that.

In some institutions the farm is profitable in the same way—raises potatoes and other vegetables for other institutions, furnishes milk and cream and butter from its dairy, and all these things have a profit attached to them, but the whole system is carried in the books in practically the same way that you are doing it.

There is one more case that we would like to cite—viz., the Clifton Springs Sanatorium at Clifton Springs, New York. There is a 300-acre farm, with a good dairy and a fine herd of hogs, and a poultry colony, and the books are kept entirely separate for the farm and for the sanatorium. Things raised on the farm and furnished to the sanatorium are charged against the sanatorium at exactly the price that the sanatorium would have to pay for them if they bought them outside.

We do not think your bookkeeping system is wrong just because one department shows a profit and another shows a high cost of maintenance; that fact alone makes the bookkeeping system perfectly clear and shows the exact status of the case, and it will give those in authority a clear insight into what they are doing.

The surgical operating rooms of the hospital, for instance, are never profitable, but are always a burden to the institution, but patients come to the hospital because they can get their surgical operations done there; therefore the surgical operating rooms are the attraction and are a necessary source of expense, the profit going to other departments, and it is understood that this is to be so, and no fault is found with that situation. The same thing is true in your institution.

Hospital Costs

To the Editor of THE MODERN HOSPITAL:

Being subscribers to your excellent magazine, THE MODERN HOSPITAL, we are taking the liberty to ask if you can give us certain information which a hospital board for which we are working is desirous of having, and relating to costs of maintenance and building per bed. We thought that possibly information you may have gathered and have at hand would enable you to give fairly accurate data on this subject, or, if such is not available, could you furnish us with a list of any articles which may have appeared in your magazine relating to this subject.

The proposition under consideration, as to type of buildings, would be based on fireproof construction of the first class, such as is required by the building laws of the largest cities in the East, and, of course, proper allowance would have to be made for increase in building costs between the time such information was gathered and now.

The hospital under consideration would be a teaching hospital, also, in addition to being a general hospital in its hospital work, which would tend to increase the cost per bed. Such information as you can give us, we know, can be only relatively correct to any specific case, as materials used, elaborateness of equipment, etc., could affect same materially. Any information, however, you can furnish or suggest will be greatly appreciated. The general information desired is as follows:

1. Average cost for buildings per bed for 200-bed hospital.
2. Average cost for buildings per bed for 1,000-bed hospital.
3. Average cost for buildings per bed for nurses' home for 250 to 400 nurses.
4. Average cost of maintenance of a hospital per bed in a 200-bed hospital.
5. Average cost of maintenance of a hospital per bed in a 1,000-bed hospital.
6. Average cost of maintenance of a nurses' home per bed for 250 to 400 nurses.

T. M. H.

We will try to reply to your letter in the order in which

you ask your questions, and then will attempt to dilate on these prices in conclusion.

1. Average cost for buildings per bed for 200-bed hospitals—about 30 cents per cubic foot.

2. Average cost for buildings per bed for 1,000-bed hospital—approximately the same amount.

3. Average cost for buildings per bed for nurses' home for 250 to 400 nurses—approximately $1,000 per bed.

4. Maintenance of hospital per bed in a 200-bed hospital—about $2.50 per day per bed.

5. Maintenance in the 1,000-bed hospital—approximately the same.

6. Maintenance of nurses' home for 250 to 400 nurses—approximately $15 per bed per month.

As you suggest in your letter, these costs must be relative rather than arbitrary, and they will be contingent on many conditions. In the first place, it makes a great deal of difference whether the 200-bed hospital is to be complete or whether it is to be added to in the form of other wings or other pavilions, because in a completed hospital all of the administrative space—that is, offices, assembly rooms, dining rooms, reception rooms, x-ray and drug rooms, etc.—will be included as for that size hospital; whereas if this is to be a part of an eventually larger hospital, the administration space will have to be built complete for the ultimate use, and will have to be proportionately very much larger than if the hospital were to be completed at 200 beds. Administration space does not cost quite so much as patient space, because the plumbing is not so great in quantity, the lighting scheme is not so elaborate, and there are a good many other particulars in which administrative space may be made to cost a good deal less than patient space. This is the reason why we have given you the cost of the building as per cubic foot instead of per bed, because the per bed basis means very little unless it contains a proviso as to the administrative space. The cost of a 200-bed hospital does not differ widely from the cost of a 1,000-bed hospital, because the moment you get into large figures you have got to plan for some extraordinary services for patients, and the administrative space in a 1,000-bed hospital runs pretty high.

Hospital costs can be made to run all the way from 22 cents up to about 40 cents. We have known hospitals, under special conditions, to cost lower than these figures and higher, but you can pretty definitely count on about 30 cents.

We have no figures available on the per cubic foot cost of nurses' homes, but, if you were to estimate at $1,000 per bed, you could build the home quite easily. There is not much administrative space in a nurses' home, and one elevator of the push-button type would be sufficient for even a large home. Generally, the nurses dine in other buildings, so that dining rooms and service rooms are not necessary. The flooring question in a nurses' home is far simpler than in a hospital, and you can use wood or battleship linoleum throughout. Now, of course, all material costs have gone up almost out of reach; for instance, in the case of a recent hospital equipment the linoleum cost laid, and laid by competent experts, $1.35 per square yard; now we understand that the linoleum in the piece costs about $1.85. Everything else has gone up in proportion.

The question of the cost of maintenance in the hospital depends very much on the character of the hospital. We know county hospitals that are costing for maintenance only $1.25 a day, but the service is unpardonably low grade according to our standards and according to the demands of modern medical science. And in planning for even a municipal hospital that has to care only for dependents, there ought to be provision for a competent laboratory of pathology, good x-ray rooms, a proper dietary, and adequate nursing. The time has gone by when we can put a nurse to take care of ten acutely sick people, and we think of our intern service as one intern to twenty or twenty-five patients, and we think always in terms of special feeding of even dependents, because we have come to regard scientific feeding as of more importance than drugs. X-ray pictures, meaning plates, cost money, and competent direction in a laboratory of pathology costs money, and, if there is to be adequate service to the medical staff in the laboratory, a good many people are required for the work, under a high-salaried head.

The Presbyterian Hospital, of New York, has a per-capita cost for its free patients of $3 per day. Most hospitals of that same class expend about $2.50 to $2.75 for free patients. The Presbyterian Hospital spends for its private room patients approximately $7 per day—not in feeding, but in service.

When we give you the figure $2.50 as the average cost of maintenance, we are taking the municipal hospitals into account and the small country hospitals, in neither of which class is there a great deal of money spent for service. If you are going to build a high-class institution for the care of both pay and free patients, and it is the intention to maintain it so that its supporters and trustees will not be ashamed of it, you had better figure $2.50 per day as cost of maintenance.

We think nurses can be maintained in connection with a home for approximately $12 per month, so far as their board is concerned; but we would add about $3 for other administrative expenses, such as maids, a matron, and the necessary people to keep up repairs.

We have not given you very many citations from the literature, but we are giving you an epitome of what the literature says. Very many examples could be cited to back up these relative figures.

Architects C. W. Bulger & Son, of Dallas, Texas, are drawing plans for a nurses' training school and dormitory to be erected by the Texas Baptist Memorial Sanatorium of that city. The building will be a five-story and basement fireproof structure, 110 by 92 feet, costing $150,000 and containing accommodations for 200 nurses. It is the first step in a movement inaugurated by the Baptists of the state toward the development in Dallas of a great medical center through the enlargement and improvement of Baylor University Medical College and the sanatorium. Colonel C. C. Slaughter, of Dallas, has promised to donate $200,000 to the correlated institutions, conditioned on $300,000 being raised from other sources, and efforts are now being made to meet the terms of the offer. When the money is assured, the next step will probably be the construction of an additional story to the main hospital building, to be devoted entirely to operating suites. Later the authorities hope to build an addition specially adapted to the care of children patients. The present group of institutions, comprising the sanatorium, the medical college, the college of pharmacy, and the school for the training of nurses, represents a development of the last seven years. Last year 8,000 patients were admitted to the sanatorium in addition to 11,000 treated at the free daily clinic.

Dr. Frederic C. Kidner, attending orthopedic surgeon at the Children's Free Hospital, Detroit, Mich., has raised a fund to send a nurse from that institution to Boston for special training in the care of infantile paralysis cases, and Miss Mabel Wagner, a graduate of the Children's Free Hospital, has been selected for the work. She will attend classes especially arranged by Dr. Lovett at the Boston Children's Hospital Dispensary.

LETTERS TO THE EDITOR

The Hospital Library Again

I was much interested in reading the article in the November issue of THE MODERN HOSPITAL entitled, "A Hospital Circulating Library." We librarians thoroughly agree with the author that an institution library, especially, should be administered as simply and with as little "red tape" as possible, but why the layman should always consider the American Library Association and "red tape" as synonymous is a great puzzle to us, since what we are working for is simplicity, efficiency, and the absence of any colored "tape."

The author's remarks about the value of the "Nick Carter" type of books for relaxation reading reminds me of a story over which the American Library Association has long chuckled. In one of our big universities was a college professor who certainly looked more like a mild and elderly tramp than the great authority he was on a certain very learned subject. While this professor was writing his books he was lost to the world, but when the book was finished he emerged from his seclusion and went on a regular orgy of dime novels to rest his mind. He had stackroom privileges at the city library, and the older librarians there knew him and his habits, but one day there was a very young and very new librarian at the charging desk, who took life and literature very seriously. To her came this meek, elderly person, with an armful of his favorite "rest" books. She looked aghast at them and then at him, and then said brightly, "O my good man! These books you have are perfectly worthless trash! I haven't time to pick out some good ones for you now; but, if you will come in tomorrow morning, I will have some ready for you which will be much better."

The author's scheme is certainly simple, but, from my twenty-three years of library experience, thirteen of which have been passed in a hospital, may I make one or two suggestions which will simplify it still more?

For one thing, don't bother with sticking any paper or cloth labels on the backs of your books; they won't stick, they will get soiled, and they are a useless expense. Write the call number directly on the book itself with Higgins' waterproof india ink; this will do for all except the very darkest covers, and for these there are several brands of white ink, none of which I have found satisfactory, but you will find very few on which the black ink will not show. I would also suggest that, instead of covering the books with paper covers, they be shellacked with some colorless shellac; they can then be wiped with a damp cloth if they get soiled, and the patients can enjoy the bright and pretty covers.

Next, instead of having to write the date, number of the book, and the patient's name in a memorandum book each time the book is taken out, it is a great labor-saving device to have a book pocket pasted in the back of each book, ruled for dates, and a book card with number, title, and author typed or written on it, which is kept in the pocket when the book is on the shelf. When the book is taken out, all you have to do is to write the patient's name or the number of the ward on the card and file it behind a date slip, dating the pocket. In this way, besides saving much time in writing, you have a complete record on the book card of the persons who have had this book. To the librarian or nurse selecting books for patients, this record is invaluable.

Again, why not use the regular American Library Association accession book, already lined for just the entries Mr. Clark suggests? And for a shelf list, although I prefer cards, a loose-leaf binder is next best, and this can be typed or mimeographed for the wards, doing double duty as shelf list and finding list. If you attempt to accession your books under several different headings, you will get into trouble with your numbers.

As to classification, why not use the Dewey to begin with, instead of dumping all your nonfiction into one class? If you intend to limit your library to a couple of hundred books or so, with only about a dozen books which are nonfiction, M is as good as any other letter or number under which to put them; but, when your library has grown to the hundreds, perhaps thousands, they will all have to be reclassified to get any sort of order among them. But is it any more work to mark Longfellow's poems 81 L, or Tennyson's 82 T, or Chapman's bird books 59 C, or Franck's "Vagabond Journey Round the World" 91 F, than to mark them all M 13, 46, or 135? Moreover, fiction doesn't need any classification number; it should be arranged on the shelves according to alphabet by authors. To get this alphabetical arrangement, you can use the Cutter author table or the author's name, with the first word of the title to designate the book. Thus Miss Alcott's "Rose in Bloom" would be numbered "A355 r," or else "Alcott r;" Rex Beach's "Going Some" would be "B351 g," or simply "Beach g." In this way you do not need to look up the number of a book in order to find it. Juveniles usually have a small "j" prefixed to the call number. Now, using the Dewey system is not "red tape"—it is simply forethought, planning ahead for the larger library, and taking advantage of something already worked out instead of trying to work out your own scheme. The Dewey system is by no means perfect, but there is no doubt that it is the best there is for the small library and the inexperienced librarian.

That there is almost never an experienced or trained librarian in charge of institution libraries is a fact well known to those of us who have been trying for the last ten years to get better library conditions into the hospitals and other institutions. We have argued and plead for training here because we know its value, but, pending the awakening of institutions to this need, we have endeavored to put our experience at the disposal of these same untrained librarians. Knowing the needs of the institution libraries as we do from direct personal contact, knowing just the rocks on which these untrained librarians come to grief, the American Library Association committee on institution libraries has prepared a very practical manual giving simple rules for selecting and buying books, cataloging, classifying, charging, mending, etc. This manual is now in press, and may be had as soon as published by writing to the American Library Association Publishing Board, 78 East Washington street, Chicago. The price will be as low as it can be made. A great deal of thought and care has been put into this manual, and the committee only hopes it will be of use to the inexperienced hospital librarian.

EDITH KATHLEEN JONES,
McLean Hospital, Waverly, Mass.

Two Baltimore hospitals, the Maryland General and the Union Protestant Infirmary, will launch campaigns shortly after the first of the year for funds aggregating nearly $500,000. The Union Protestant Infirmary will seek at least $250,000 for the erection of new quarters, while the Maryland General Hospital hopes to secure $200,000 to liquidate its bonded and floating indebtedness and make certain improvements.

INDUSTRIAL WELFARE

FROM KINDERGARTEN TO LIBRARY

* * *

Welfare Work of the Homestake Mining Company, Lead, S. D.

BY F. E. CLOUGH, M. D.

The average individual has the idea that South Dakota is strictly an agricultural and stock raising country, few realizing that in the southwest portion of the state are situated the Black Hills, the highest range of mountains in the United States east of the Rockies.

These hills are highly mineralized, containing practically every known element to a greater or less degree. In the northern part of the Black Hills is located Lead (pronounced Leed), a city of 8,500 inhabitants, the home of the Homestake Mining Company, the largest gold mining concern in the world. The company has been running continuously since 1877, and has taken from the ground approximately $150,000,000 of gold. In order to produce an annual output of $6,000,000 about 2,500 men are steadily employed.

Since its inception the management of this company, and especially its principal stockholder, Mrs. Phoebe A. Hearst, of California, has been vitally interested in any movement that would inprove the general condition of the workman and his family.

HEARST FREE LIBRARY

Probably the first important welfare movement was the inauguration in 1895 of a free library and reading room. Starting out in a small way, when the town was a typical mining camp, it has grown with the city, and is now one of the most popular institutions. A summary of its work for the past twelve months is given:

Total number of volumes in library	10,500
Total number of periodicals on file	82
Total number of foreign periodicals on file	4
Total number of newspapers on file	21
Total number of foreign newspapers on file	5
Total attendance for year	110,501
Minimum daily attendance (June)	276
Maximum daily attendance (January)	381
Total circulation of books for the year (adult books 25,203; juvenile books, 12,903)	38,106

In order to cater to all people living here, books are on file written in English, German, Scandinavian, French, Italian, Spanish, Slavonian, Lithuanian, and Finnish. A corps of one trained librarian and two assistants carry on the work of the library.

HEARST FREE KINDERGARTEN

Through the beneficence of Mrs. Hearst, a kindergarten was fully equipped and opened in 1900, and has been running continuously since that date. Sessions are held from April 1 until Christmas, but none during the cold winter months. Children between the ages of 4 and 6 are admitted, the older ones coming in the morning, the younger ones for an afternoon session. A corps of five kindergarten teachers take care of an average daily crowd of 150 youngsters. This kindergarten has proved one of the chief Americanizing institutions in the city.

RECREATION BUILDING

In 1914 the Homestake Mining Company presented, for the free use of all the people, a recreation building costing $250,000. This is a large three-story brick and stone structure, containing rest rooms, billiard rooms for adults and children, gymnasium, bowling alleys, plunge and

Fig. 1. Homestake Mining Company's welfare work. Recreation building.

shower baths, library, and theater. No charges are made for the use of any part of the building, except for the theater proper, where a 10-cent picture show or a road show is presented daily except Sunday.

The plunge is a white tile tank, 25 by 75 feet in size, with water ranging in depth from 4 to 9 feet. This water is heated to 80° F., and is filtered, disinfected, and changed frequently. As far as can be determined, no contagion has occurred from using the plunge. This tank is patronized by approximately 2,000 persons a month, about equally

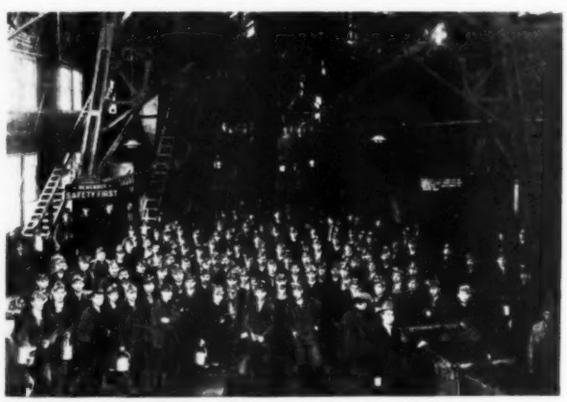


Fig. 2. Homestake Mining Company's welfare work. Miners going to work.

divided between men women, boys, and girls. Transients are furnished suits and towels, and the plunge is a great play place for theatrical troupes and other organizations reaching this city.

The bowling alleys are six in number, equipped with Bachus automatic pin setters, while the alleys are kept as finely polished as is possible. Tournaments are carried on throughout the winter. About 3,000 persons use these alleys every month, rolling 7,000 games during that period. The billiard rooms are equipped with seven tables, four for adults and three for children, and are used by nearly

5,000 persons every month. The theater proper is very metropolitan in appearance, and is the most popular part of the institution, nearly 20,000 persons attending each month. In the main rest room of the building are card tables, chess tables, and plenty of room for lounging purposes. It has been reported by people who know, that this is the finest building of its kind erected by any industrial concern in the United States.

HOSPITAL

For many years the employees supported a hospital, each man contributing $1.10 a month. For the past six years, however, the company has maintained this institution at its own expense at an annual outlay of nearly $50,000. A staff of seven doctors and seven graduate nurses is constantly in attendance. Free medical, surgical, and obstetric hospital service and medicines are granted to every employee and his family or those dependent on him for support, so that, no matter what exigency might

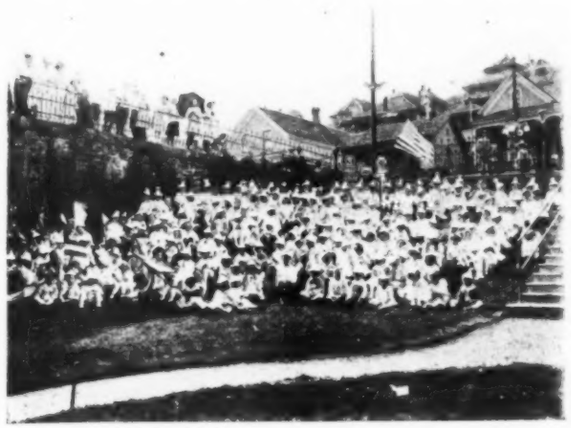


Fig. 3. Homestake Mining Company's welfare work. Kindergarten Fourth of July party. Eighteen different nationalities represented.

arise, no employee has to pay any doctor or hospital bill. A well-equipped 20-bed hospital is now in use, which will be supplanted next year by a thoroughly modern building. Only experienced doctors are engaged, and they are paid salaries sufficient to keep them for a number of years. Every doctor is compelled to do one month's post-graduate work each year. A visiting nurse is kept on the staff, but, as there are no poor people in the city, her work is mainly assisting the doctor in home calls. Some idea of the popularity as well as the extent of the hospital service may be gained from the summary of the report for the year 1915.

Number of persons in office	53,000
Professional calls to homes	21,407
Confinements	226
Surgical cases, accidents, operations	1,400

In addition to these activities, the company contributes $1,000 a month to a mutual benefit insurance company, and also gives for a Christmas present a 7-percent bonus of every man's yearly wage. To every church in the district $200 is contributed annually, about thirteen receiving this benefit.

Much interest is manifested in teaching "first aid" to the injured, the Homestake First Aid team being now the champion mining team of the country. This honor was won a year ago at a nationwide contest held under the direction of the United States Bureau of Mines at San Francisco. In connection with "safety first," a full-time safety engineer is employed, and, while no definite organization has yet been perfected, much attention is paid to prevention of accident, so that this company has as few accidents as, or perhaps fewer than, other first-class mining companies. For the most part the employees are American or English-speaking foreigners, it being compulsory for all foreigners to become naturalized as soon as the law permits.

That these welfare measures have paid is evidenced by the fact that there is no better class of laboring man anywhere than here, nor can few cities boast of as great a percent of homes owned by workers as here.

INTEREST OF EMPLOYEES CONSTANTLY HELD

* * *

Welfare Work of Cincinnati & Suburban Telephone Company Includes Country Home Where Girls Go to Rest

BY R. T. McCOMAS, Vice-President and Assistant General Manager.

In these days of ever-increasing activity in the business and social world, there is, perhaps, no factor more important in the home and office, no adjunct more indispensable to modern living, than the telephone. And inseparably connected with the telephone is the telephone operator, that "weaver of speech" on whose ability so much depends.

"Efficiency" is the cry of the hour, and it is safe to say that in no field of endeavor into which women have entered is efficiency more essential than in the operating room of a telephone exchange; for efficiency here spells first-class telephone service, and we all know (perhaps to our sorrow) that, unless such service is first-class, it is useless—nay, more, it is positively harmful.

Cincinnati justly boasts of its splendid telephone service, due to the high standard of efficiency maintained among its employees by the Cincinnati & Suburban Bell Telephone Company. Realizing how very much good work is dependent on good health, and that a sound mind in a sound body is an invaluable asset to the girl at the switchboard in particular, the company is ever on the alert to adopt measures that will tend to the mental and physical betterment of its operators. In line with this policy, it introduced in March, 1911, a new working schedule, whereby an operator reports for duty from 7 a. m. to 2 p. m. one day, and from 2 p. m. to 9 p. m. the next, thereby working but seven hours per day, in addition to which a daily relief of twenty minutes is allowed. This alternating schedule is in high favor with the girls, as it allows so much free time each day for personal demands. Furthermore, each operator is allowed two weeks' vacation with pay—one week in winter and one week in summer.

In all the large exchanges of the company, bright, cozily furnished rest rooms invite relaxation and repose when the operators are off duty. Beautiful pictures and rugs, luxurious couches, easy chairs and rockers, library tables strewn with the latest magazines and the daily newspapers—in fact, everything conducive to rest and comfort—is here provided.

An elegantly appointed dining room, with up-to-date kitchen, is part and parcel of every exchange. Here, amid refined and homelike surroundings, a substantial meal is furnished to the operators at less than half the actual cost. The food is wholesome and appetizingly served, and the menu is changed daily. The following is a sample taken at random:

Vegetable Soup

Roast Beef Mashed Potatoes

Sliced Tomatoes

Bread and Butter Tea or Coffee

For this the operator pays 4 9/10 cents.

A large commissary department, with refrigerating plant, is maintained in the new main exchange building, where great quantities of food are kept, and from this base of supplies all the city and suburban exchanges are furnished daily with their requirements, the food being delivered by an autotruck, kept especially for this purpose. All exchanges serve the same menu.

Fig. 1. Cincinnati & Suburban Bell Telephone Company. Hazelhurst, the country home of the operators.

Should an operator be taken suddenly ill, she is cared for in the hospital room (situated in close proximity to the operating room), which is equipped with a couch, reclining chair, and plentiful supply of blankets and pillows, and a medicine cabinet containing all the necessities for rendering "first aid." If a case proves serious, the company's resident physician, a man eminent in his profession, is summoned. His office is maintained in the main exchange building, where he may be consulted at all times, without charge, by the employees.

Fig. 2. Cincinnati & Suburban Bell Telephone Company. View of living room.

A very important feature of the company's welfare work is the employees' pension, disability benefits, and insurance plan, which is briefly as follows:

In case of sickness, those employees in the service ten years or more receive thirteen weeks' full pay and thirty-nine weeks' half pay; those five years or more in the service receive thirteen weeks' full pay and thirteen weeks' half pay, while those but one year in the service receive four weeks' full pay and nine weeks' half pay. In case of death, the employee's insurance, regulated according to the length of service, is paid to the dependent beneficiary. In order to receive the benefits of this plan, an employee must be in the service one year. Both sexes are eligible. For all this the employee is not assessed one cent. The benefits are paid from a fund contributed by the company.

Retirement on pension is provided as follows: (a) for employees whose term of employment has been twenty years or more and who have reached the age of 60 (females, 55); (b) for employees whose term of employment has been twenty-five years or more and who have reached the age of 55 (females, 50); (c) for employees whose term of employment has been thirty years or more; and the amount in each case is 1 percent of the average

Fig. 3. Cincinnati & Suburban Bell Telephone Company. One of forty-six bed rooms.

annual pay during ten years for each year of service. The minimum pension is $20 per month.

Of the many social features recently introduced, the most popular is the monthly dance, to which all operators and their friends are invited. On the beautiful new roof garden of the main exchange, far above the glare and din of the city street, amidst flower-entwined pergolas, the merry dancers trip the light fantastic until 11 p. m. The music, the flowers, the soft electric lights, and the pretty,

Fig. 4. Cincinnati & Suburban Bell Telephone Company. Commissary department in the main exchange.

shimmering costumes of the girls all give to this novel ball room the appearance of fairyland. In inclement weather the dances take place in the large auditorium of the building.

Not content with all these measures for the comfort and happiness of the employees, the company about two years ago purchased a beautiful residence at Mt. Healthy, a suburb of Cincinnati, and, after expending thousands of dollars in remodeling and equipping it, presented it to its

Fig. 5. Cincinnati & Suburban Bell Telephone Company. Dining room in the main exchange.

girl employees for a vacation home. "Hazelhurst," as it is called, is situated on a plot of rolling ground in the midst of magnificent old oaks, and is approached by a long, winding walk. It is an ideal country home, with all the conveniences of an up-to-date city hotel. The woodwork throughout is white enamel, and the walls are done in soft grays. There are forty-six bed rooms, each containing a white enamel bed, rocker, and dressing table, with white marble washstand in an adjoining alcove. Art rugs of delicate hue cover the polished floors, and white, filmy curtains drape the windows. Each room opens out on a screened sleeping porch. The dining room is furnished in are those of a first-class home. Lavender and gray tones Flemish oak, with inset buffet, and the table appointments predominate in paper and draperies.

"Hazelhurst" is famous for its cuisine. The best the market affords, prepared by culinary artists, is served in an abundance to appease the keenest appetite. The most attractive spot in this beautiful home is the large living room. Persian rugs strew the polished floor, and soft upholstered chairs, bookcases filled with the latest and best fiction, magazines, and papers, make this a pleasant place to while away a leisure hour. Its chief charm, however, is the great, wide stone fireplace, where, in winter, the crackling logs send forth their cheer and warmth on the merry groups gathered about it, for "Hazelhurst's" hospitable doors are open to welcome guests in winter as well as summer.

Adjacent to the main building on the north is the dance hall, whose mirrorlike floor is a delight to the girl who loves to dance. A splendid player piano and victrola furnish the requisite music, and dancing is a favorite pastime.

Everything that will amuse and interest a care-free girl is found at "Hazelhurst." The home is presided over by a woman of great charm and refinement, who dispenses a generous hospitality to the girls who are her guests, and whose personal interest in their welfare has made her their idol. A homelike atmosphere pervades the place; there are no obnoxious rules and regulations and no undue restraint to mar the perfect enjoyment of the guests; and there are no bills to be paid when vacation days are over, for everything is free to the operators here—free as the air they breathe.

Is it any wonder that among the girl employees "Hazelhurst" is a word to conjure with, and that they eagerly look forward to a stay in such an ideal spot?

It may be asked, does all this pay? Well, this company finds it does; for there are no employees more conscientious in their work, more appreciative of their blessings, or more loyal to their company, than those of the Cincinnati & Suburban Bell Telephone Company.

A new hospital at Middletown, Ohio, erected by the Middletown Hospital Association at a cost of nearly $50,000, will be opened for patients some time in January. Miss Ruth Gardner Clark, a graduate of the Presbyterian Hospital, of New York city, and formerly superintendent of the Hudson City Hospital, Hudson City, N. Y., has been engaged to equip and organize the new institution, which has a capacity of 30 beds.

Miss Susan C. Francis, superintendent of the Jewish Hospital, Philadelphia, was reelected president of the Graduate Nurses' Association of Pennsylvania at the annual convention of the association recently held in Pittsburg. Miss Williamina Duncan, of Pittsburg, was reelected secretary and treasurer.

Construction work on a new home for the Northern Pacific Hospital at Missoula, Mont., is well advanced. The contract, however, does not call for the completion of the building before July 1, 1917.

A new $3,500 motor ambulance was a Christmas gift to the Uniontown (Pa.) Hospital from friends of that institution.

NEW INSTRUMENTS AND EQUIPMENT

VINCENZ MUELLER, Technical Editor.
GEO. W. WALLERICH, Associate Editor.
Please address items of news and inquiries regarding New Instruments and Appliances to the editor of this department, 327 Southeast avenue, Oak Park, Illinois.

New Vacuum Bottle

Suction apparatus for the purpose of removing blood during operations in the abdominal cavities, for nose and throat work, removing pus from the sinus and abscess cavities, etc., have become quite popular with the surgeons who follow the different specialties. A new vacuum bottle has recently been devised by Dr. John Robertson, Cincinnati, Ohio, which has some special features not possessed by other apparatus of this type. The bottle has a capacity of one gallon, and consequently is of ample size for all purposes. It is of large circumference, so

Robertson vacuum bottle.

that it cannot be easily upset. The bottle is supplied with a solid metal head, supporting a vacuum gauge, with a valve for regulating the suction force. The head is secured to the bottle by convenient screw clamps, with a rubber gasket between, so as to make an air-tight connection. The intake tube is provided with a cutoff, to which different instruments may be attached. Two of the most serviceable of these instruments are shown in the illustration; one of these is intended for removing blood and mucus from the throat and the other for tonsils. The force of the vacuum may be regulated from zero up to 26 inches mercury when used with one of the Robertson pumps, and, when used with other pumps, up to the capacity of the pump. The principal advantage over other vacuum bottles claimed by the inventor is that the exact amount of suction is always known by observing the gauge.

Protective Shield for Retaining Dressings After Mastoid Operations

One of the most disagreeable things to a patient who has undergone a mastoid operation is the wearing for days and weeks of heavy dressing held in place by a bandage which must encircle the head.

In order to do away with this, Dr. J. A. Stucky designed the device shown in Fig. 1. The shield is made of ordi-

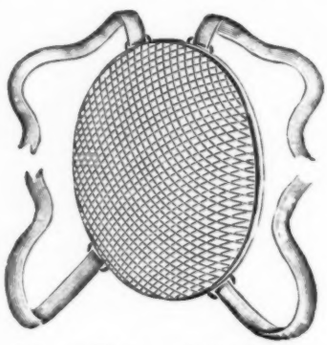


Fig. 1. Stucky protective shield.

nary fine copper wire netting, such as is usually used for screens. This material is cut into proper size, formed into saucer-shape by means of a mold, and bound with tape or flexible metal tubing (the latter binding is more substantial and durable), so that the shield can be adjusted to the shape of the head and neck. After removal of the dressing applied at time of operation, usually in

Fig. 2. Stucky protective shield applied.

twenty-four to thirty-six hours, a light dressing is applied over the incision and cotton placed in the bowl of the external ear; these are held in place by the sterile wire shield, which is bound to the head by four pieces of tape, as shown in Fig. 2.

The cotton and gauze can be seen through the wire shield, and when soaked with discharge from the wound can be promptly removed and fresh dressing applied. Not

only does all this add to the comfort and contentment of the patient, but also the wound is kept free from soiled dressing, and has the additional advantage derived from exposure to the air, which hastens the healing process.

New Binocular Magnifier

The binocular magnifier shown in the accompanying illustrations has been designed to enable medical men called on to examine small objects with a low magnification

New binocular magnifier with cloth headband.

to do so conveniently with both eyes simultaneously. Binocular vision in such an instrument has always been desired in order to gain perception of depth, but optical means heretofore available seem to have proved insufficient to provide it. Binocular vision, correctly applied, does more than improve the general definition—its great importance lies in the fact that it enables the observer to see the object well defined and in relief, giving practically a natural perspective.

With this low-power binocular magnifier the condition above outlined is fulfilled, since the objects are produced as planes in the image. With the older form of binocular magnifiers it seems that this very condition was lost sight of, and consequently the depth of definition and true perspective were impaired. To overcome the difficulty, the manufacturers have arranged two rhombohedric prisms in order to reduce the distance between the optical axes on the object side of the prisms, so that both fields of view appear within comparatively small convergent angles. The eyepiece caps are made of vulcanite, and so shaped that they fit snugly over the edges of the orbit, and the entire instrument may be kept in position by an adjustable elastic or special fiber headband, as desired.

Binocular magnifier with fiber headband and electric illuminating appliance.

In using a binocular magnifier for dissecting work, it has been found inconvenient when looking for the instruments required. To overcome this difficulty, an aperture has been provided in the lower part of each of the eyepieces, through which the observer may obtain natural vision. The eyepiece caps allow the insertion of correction glasses, essential for users with astigmatic eyes. The use of correcting glasses is also recommended when the user is myopic, for otherwise he will experience a considerable shortening of the working distance.

This binocular magnifier also may be conveniently used on an adjustable stand, consisting of a round metal base with vertical pillar. The horizontal arm carrying the instrument can be moved up or down or turned around its axis, as may be desired.

To facilitate observation of deep cavities, dark, uneven specimens, etc., an illuminating appliance may be fitted to the binocular magnifier, as shown.

This illuminating appliance consists of an electric metal filament lamp and condensing lens system, with which the binocular field may be brightly illuminated, a decided advantage.

Apparatus for Intravenous Salvarsan Injection

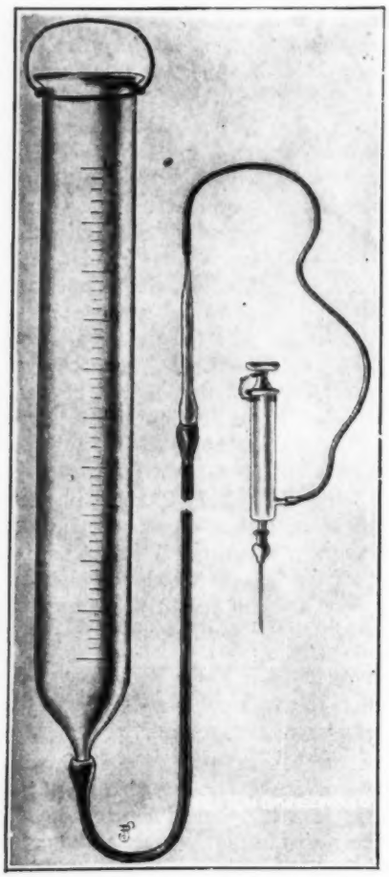
BY LOUIS RENE KAUFMAN, M. D., F. A. C. S., New York, N. Y.

Apparatus for the administration of Salvarsan by various methods are constantly being invented, but it is intended to illustrate and describe in these columns only those devised which are really practical and comparatively simple in construction and operation, and the outfit illustrated here seems to embody these requirements. The apparatus consists of a graduated glass container of 250 cc. capacity, all-glass Luer syringe 1½ cc. capacity, one needle glass connecting tube, and the necessary rubber tubing. The Luer syringe has at right angles connected to it a short glass spout ¼ inch from the neck of the syringe. A small-size rubber tube, 18 inches long, is connected to this spout, terminating at the other end in a glass tube, which joins the rubber tube leading to the glass Salvarsan cylinder. The cylinder is suspended, so that the whole apparatus is essentially a gravity flow. An ordinary slip-on large hypodermic needle is attached to the syringe, and its bore may be adapted to the vein, a needle ⅝ inch long being preferable.

The method of using is evident from the illustration. In beginning an injection, the Salvarsan cylinder is first filled with sterile distilled water. By pulling up the plunger of the syringe, the solution flows through and expels the air in the whole circuit, after which the flow is stopped by pressing the plunger home; for subsequent injections this need not be repeated. Then the plunger is pulled out gently, and blood fills the part of the syringe in front of the glass tube at the side of the syringe if the vein is properly entered. As soon as blood appears, filling the syringe, the plunger is pulled out further, and at once the Salvarsan enters by the side tube by gravity, driving the blood back into the vein, so that in a moment the

syringe becomes filled with Salvarsan solution. The injection may be stopped by forcing the plunger back, thus shutting off the side outlet. There is no danger of air entering a vein, for practical use shows that one always has a closed circuit.

The inventor claims that the following advantages are derived from this apparatus: 1, the operator has perfect

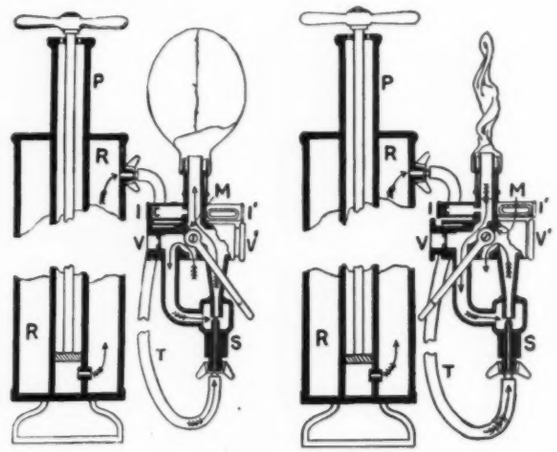


Kaufman Salvarsan apparatus assembled ready for use.

control of the flow of Salvarsan, which is plainly in sight; 2, there is no soiling whatsoever of the field by blood, usually infectious in Salvarsan cases, or by solution; 3, asepsis is assured, for the needle need not be handled after sterilization, as it is manipulated and controlled by the syringe; 4, avoidance of clot formation in the needle, for, as soon as the vein is penetrated, the Salvarsan flows in automatically.

Portable Pulmotor

A portable model of a pulmotor has been recently placed on the market, and, having several features which are new and go far toward rendering the apparatus safe even in inexperienced hands, it deserves careful consideration. Objections have often been made to the types of machines having measured volumes of air depending on the amount of pumping done. The results then depend largely on how fast the pump is operated. In this new pulmotor a valve is used, which not only applies, but controls, air pressures, producing inhalation or exhalation of the patient's lungs. The pressure control valve is operated by the person at the patient's head, and not by the assistant who works the pump. On each side of the pressure control valve is an indicating gauge showing exactly what pressures are being exerted on the lungs. The importance of this feature lies in the fact that patients of different ages and cases of different kinds should be given entirely different lung pressures. For example, pressures for an infant should naturally be far less than those for an adult. An alcoholic will require different pressures from a drowning case. By adjusting the valves for the case in hand, both volume and pressure are set. It is then for the operator to administer the air or oxygen, whichever is used, paying no further attention to the source of supply or pressure. The automatic valve has also been designed so that the instant the patient attempts to resume normal breathing, this fact is indicated. A



Working parts of type "B" pulmotor. P, pump; R, air receiver; T, high-pressure tube; S, injector; V, control valve for regulating amount of inhalation; I, indicator for measuring amount of exhalation; L, indicator for measuring amount of inhalation; M, valve for alternating inhalation and exhalation.

special apparatus has been designed that is particularly valuable for the operating room, and consists of an oxygen cylinder and reducing valve.

The two diagrams show the complete inhalation and exhalation action of type "B" pulmotor. For demonstrating purposes, a rubber bag is shown connected to illustrate the action of the lungs. In diagram "A" note the direction taken by pumped air, through the pressure control valve to the rubber bag. The lever is turned to the right, which closes all outlets that would draw off air from the lungs. In diagram "B" the lever is turned to the left, closing the direct valve passage to the lungs, and permitting the pump to draw off the air in the lungs.

Closely following the organization of the Association for the Prevention and Relief of Heart Disease, whose activities will be nation-wide, the Post-Graduate Hospital, New York city, has formed a special committee to aid the work of its cardiac department. The committee will cooperate with the visiting nurse and social service inaugurated by the hospital six months ago for patients in its heart clinic.

Killdeer, N. D., founded two years ago and now claiming a population of less than 700, is soon to have a modern community hospital. In fact, temporary quarters are now being erected for the institution by Drs. Oscar Smith and L. F. Fisher, who will care for patients until the first permanent building is ready, some time next summer. The building now in course of construction will then be converted into a home for nurses. For the establishment and operation of the institution the Killdeer and County Hospital Association has been organized and incorporated with an authorized capital stock of $50,000.

BOOK REVIEWS

Studies in Ethics for Nurses. By Charlotte A. Aikens. W. B. Saunders Company, Philadelphia, 1916. Pp. 320, cloth, $1.75 net.

In her "Ethics for Nurses," Miss Aikens has met a need that superintendents of nurses have been feeling for some time. Mrs. Robbs' "Nursing Ethics," which was written in 1907, has always been considered a classic in the education of nurses, but since that time there have been no noteworthy books along that line. Miss Aikens' book will be warmly welcomed. It is a practical combination of psychology, every-day philosophy, and the elements of religion, and, although primarily written for nurses, it could be read with advantage by other classes of students. As a text-book on character building it is developed along the simplest lines. Beginning with a discussion of personality and character, attention is directed to development through emphasis on the primary virtues and their relation to every-day life. Young women in training schools do not, as a rule, give much thought to the fact that their attitude of mind and habits of life exemplify or fail to exemplify principles, and the simple, yet convincing, way in which Miss Aikens' book calls attention to this relationship between principles and life will open up channels of thought and direct the efforts of the growing group of serious-minded ones among the number to perfectly definite methods of growth and character development. A chapter on the ethical aspects of hospital accidents, another on the cost of training, and another on developing a symmetrical life will give an idea of the subdivisions of the second section. Many illustrations and practical problems drawn from life emphasize the ideas that are being developed, and are an important feature of the book. The third section, dealing with problems after graduation, is especially valuable. Suggestions about money saving and investment, the need of constant study, and the discussion of practical difficulties that arise in the work of many graduate nurses will be of decided value to many thoughtless or perplexed readers. The book is made particularly helpful as a text-book by the addition to each chapter of pertinent questions and suggested topics for discussion.

JULIA C. STIMSON,
Barnes Hospital, Washington University, St. Louis.

Clinical Laboratory Technic for Nurses. By Anna L. Gibson, R. N. Whitcomb & Barrows, Boston, 1916. Pp. 185, $1.25.

Miss Gibson has brought together in her comprehensive volume the latest information concerning laboratory methods. In scope it illustrates strikingly the expansion and specialization in this distinct field of nursing education. The work touches on bacteriology, chemistry, hematology, histology, and parasitology. The author has culled the necessary material from each and presented it in a practical and systematic manner.

In twelve chapters the necessary technic is given to enable the laboratory worker to carry out the ordinary procedures without the burden of unnecessary details. Points that might be somewhat abstruse to the uninitiated are explained in a clear, concise manner. Chapter I deals mainly with laboratory equipment, the kind of glassware in general use, solutions and reagents employed, and a few rules for general guidance. Chapter II describes the use and care of the microscope. In Chapter III between thirty and forty tests are given for urine examinations, together with drawings of crystals, casts, and cellular elements found in abnormal conditions. Nephritic and diabetic diets used in the Boston City Hospital are appended. Chapters IV, V, and VI are devoted to the examination of feces, gastric contents, and sputum. Chapter VII is a valuable one, describing the changes taking place in the blood in disease and the methods of determination. Various phenomena, such as agglutination and the formation of antibodies, are described. Noguchi's modification of the Wassermann technic is included. Chapters VIII and IX describe various bacteriological procedures, such as the preparation of vaccines, staining methods, and cultivation of aerobic and anaerobic organisms. The remaining chapters are devoted to the preparation of culture media, the examination of body fluids, and the preparation of tissues. Nurses engaged in laboratory work will find the book of great value.

A Manual of Fire Prevention and Fire Protection for Hospitals. By Otto R. Eichel, M. D., director of sanitary supervisors, New York State Department of Health. John Wiley & Sons, Inc., New York, 1916. Pp. 69, cloth, $1.

Much has been written on fire prevention and fire protection in hospitals, but chiefly on isolated features. This manual gives a brief survey of the entire field so far as hospitals are concerned. The author points out that, since the hospital is virtually a large residence, fire risks in hospitals belong to the residence class. Contrary to general belief, fire risks are greater in buildings where people live than in those where they work or play. Fire prevention and the safeguarding of life, the author remarks, are more important in hospitals than fire protection and the preservation of property. Under "Common Hazards in Hospitals and Their Safeguarding" he takes up lighting, heating, exposure, and miscellaneous hazards; under "Fire Appliances and Safeguards" he discusses chemical and other hand extinguishers, and other appliances, such as fire doors and shutters, fire-retardant paints, fire escapes and ladders, fire alarm box and sprinkler systems. Other sections are devoted to "Miscellaneous Precautions," with regard to water supply, valves, hydrants, gravity and pressure tanks, and locked doors, and the "Hospital Fire Department." A short list of books and articles on fire prevention and fire protection is appended for the benefit of those who wish to become better acquainted with the subject.

The Source, Chemistry, and Use of Food Products. By E. H. S. Bailey, Ph. D. P. Blakiston's Son & Co., Philadelphia. $1.60.

This book, by the professor of chemistry at the University of Kansas, may well be used as a reference book for nurses. It was written as a text for students in high school, and therefore it does not go into detail too much, nor is it too deeply scientific for the use of the nurses.

While it does not treat of the dietetic value of food, it does contain a vast deal of reliable information about "Food Products." In order to obtain this knowledge,

nurses and physicians would previously have been compelled to read many books or search through much material. Professor Bailey has brought the principal facts together in such a way that we get not only the chief points of our common food products, but we learn also of the methods used in their production. In some instances these methods affect the dietetic value of a food very much. In connection with the methods of production of the several food materials, the byproducts are given and their use as food. While this is, perhaps, not of direct interest to the nurse, it is a valuable feature for the physician as well as for the dietitian.

The chapter on Food Constituents gives in a very clear, concise manner a classification of food principles which may be readily understood by the nurses. In the discussion of cereals and starch manufacture, there are many facts stated which should be better known in medical circles. The chapters on Fats and Oils, Nuts and Nut Products, and Oleomargarine and Cheese deserve special mention.

Physics and Chemistry for Nurses. By Bliss and Olive. J. B. Lippincott Company, Philadelphia. $1.50.

This is the third text book in chemistry for nurses that has entered the field within the last year and a half, only this time a small portion devoted to physics seems to entitle the book to a more pretentious claim—namely, "A Text Book of *Physics* and Chemistry for Nurses." The authors, A. R. Bliss and A. H. Olive, were formerly professor and assistant professor, respectively, in Birmingham Medical College and Graduate School of Medicine, University of Alabama. Both Dr. Bliss and Dr. Olive are reinforced with an enviable number of degrees following their names on the title page, which should be significant of their preparedness to cope with the subjects in hand.

The authors aim to present simply and concisely those phases of physics and chemistry ". . . which are of special interest and importance to the student and the graduate nurse," the ground covered being adapted to a year's course.

There is a total of 239 pages in the book, 202 pages of which are given to actual subject-matter. It is divided into five distinct parts; the first part is devoted to the presentation of some general physical phenomena; the second, third, and fourth parts deal respectively with inorganic, organic, and physiological chemistry; the last part has to do with the consideration of fermentation and ferments, disinfectants, deodorants, and antiseptics.

The choice of subjects as outlined is the rational one and a good one; whether the ground covered is of wisest selection is more questionable, as is the relative proportions assigned the respective subjects. For instance, it is surprising that so much space should be given to such topics as a recital of specific and general properties of matter, to acoustics, to an exhaustive table of elements, to the commercial preparation of different forms of alcoholic beverages, etc., when there is need for simple elaboration of so many really live subjects and more worth while to the student nurse. It is equally astonishing that ferments and fermentation, disinfectants and deodorants, important though they be, should receive more consideration than physiological chemistry and nutrition, which are so full of vital interest.

Certainly the aim of any text in chemistry should be to give some degree of academic independence and an ability to apply knowledge of chemical principles in related fields. The text under discussion dwells very little on fundamental principles, for, aside from brief introductions in each part, it is largely an encyclopedia of definitions and descriptions of specific terms; and any student, nurse or otherwise, who has, as a result of a course in chemistry, only such information has very little that is usable or worth the effort expended.

There are the usual number of errors, chiefly in the chapters dealing with the physiological chemistry. Lactose is classified as a vegetable enzyme; glucose is the only product mentioned in the inversion process with cane sugar; and trypsin is said to take proteins only as far as the peptone stage. These are some of the most glaring lapses; there are others of equal or less importance.

The criticisms are on the work as a text. As an encyclopedia of information, it is valuable and should find a usable place among the nurse's book of reference.

Surgical and Gynecological Nursing. By Drs. Parker and Breckenridge. J. B. Lippincott Company, Philadelphia.

We are told that one of the essential qualities of a profession is the acquisition of a body of theory. Slowly but surely in this regard nursing is seeking to develop from a vocational to a professional status, and, through the earnest and painstaking efforts of nurses and physicians, we are in a fair way to possess a creditable literature.

A notable addition has lately been made to the nurse's library in the recently published volume, "Surgical and Gynecological Nursing," by Drs. Parker and Breckinridge, of Washington, D. C. The J. B. Lippincott Company has given the book an attractive, serviceable binding and good, readable type, and the numerous illustrations add greatly to its value and interest.

The aim of the authors has been to ground the student nurse in the principles of general surgery and gynecology. An honest endeavor has evidently been made to confine the subject-matter to these branches of nursing, but, as every instructor of nurses learns sooner or later, the allied subjects impinge at every point and cannot altogether be ignored. If, then, as in the chapters which deal with elementary nursing procedures, the authors appear to have departed from their original intention, one can realize their reasons for so doing even while deprecating the inclusion of such material in a book of this kind.

The style of the book is admirable—simple, dignified, and lucid—and is in refreshing contrast to the slipshod English which mars so many nursing text-books.

A point worthy of special mention is the recognition by the authors of the fact that underlying principles must be fully understood if nursing procedures are to be intelligently performed. No attempt is made to teach by rule of thumb. The volume commences with an admirable synopsis of the essentials of bacteriology. Better still, it proceeds with an outline of surgical pathology which, while necessarily sketchy and incomplete, still is far superior to anything so far attempted in books of this type. The coloring of the plates showing tissue changes in inflammation would be of decided advantage in future editions.

As is natural in a book written by surgeons, considerable emphasis is laid on operating room technic, and many pages are devoted to the nomenclature of the various instruments, suture materials, and other operating room paraphernalia. The intention presumably is to assist the trembling junior through those trying crises which we all remember, when, having been requested to bring an aneurysm needle, we returned trembling with a periosteal elevator or some kindred atrocity.

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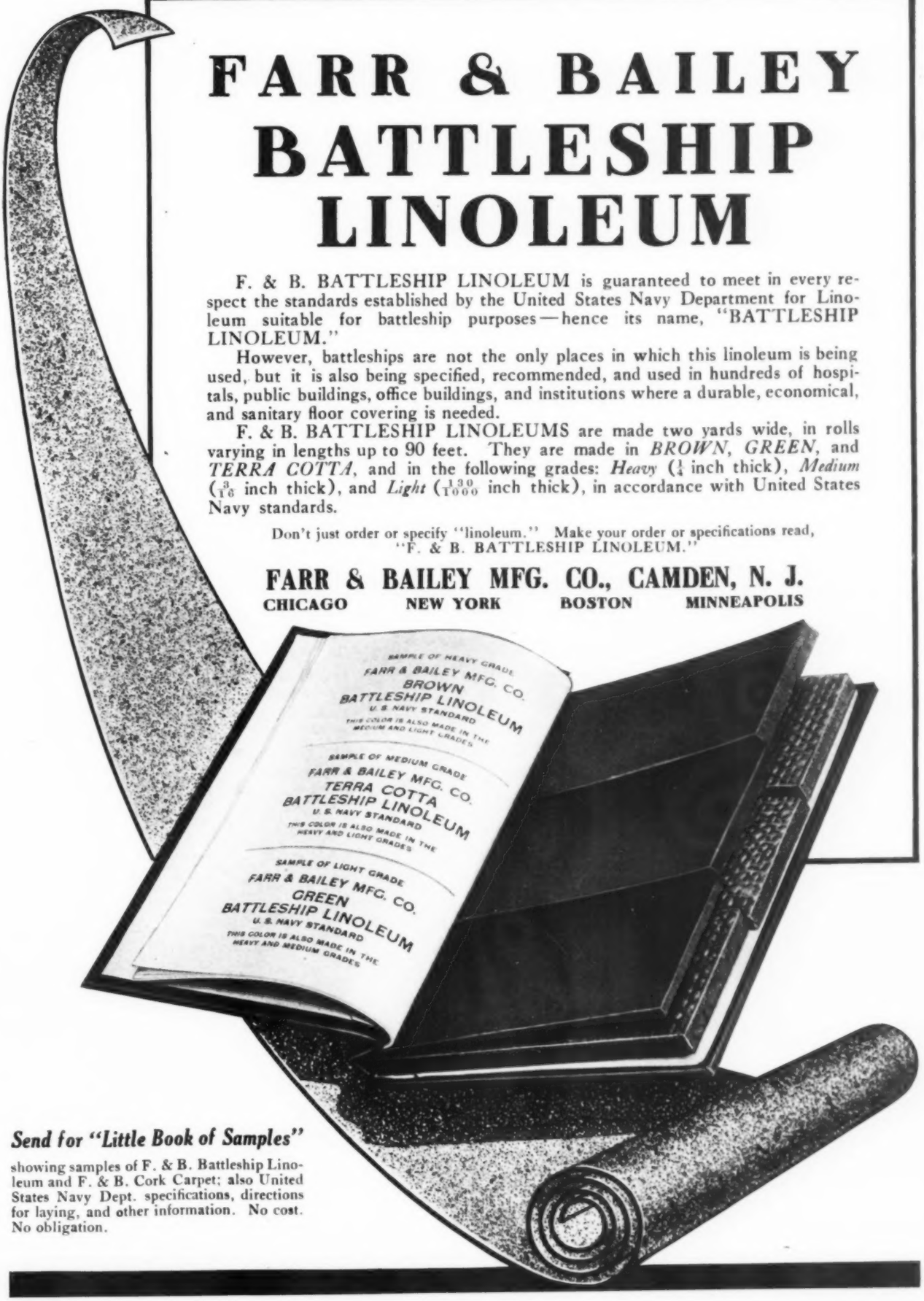
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NEWS OF THE HOSPITAL FIELD

The Berkeley (Cal.) Dispensary is operating in a new building.

Miss Grace Reeb has opened a private hospital at St. John, Mich.

The Government is opening a new hospital for Indians at Hoopa, Cal.

A cooperative hospital association is being organized in Salt Lake City.

A new home for the Crosby Hospital, Crosby, N. D., is nearing completion.

Mrs. W. H. Weaver has opened a private maternity hospital at Weiser, Idaho.

Dr. J. Myler Crenshaw, Redlands, Cal., is preparing to open a new private hospital.

The St. Joseph Sanitarium, St. Joseph, Mich., is preparing to enlarge its capacity.

Citizens of Danville, Ky., have subscribed $40,000 for the erection of a community hospital.

The Maine General Hospital, Portland, is having plans prepared for a three-story isolation building.

Complete x-ray equipment has recently been installed by the Allegany Hospital, Cumberland, Md.

The Valentine Hospital, Valentine, Neb., was damaged by fire in the early morning of December 1.

The Frankford Hospital, Philadelphia, has purchased a site for a nurses' home and other extensions.

The German Evangelical Deaconess Hospital, Marshalltown, Iowa, has recently opened a new addition.

Construction work will soon be started on a new $75,000 building for the Burnett Sanatorium, Fresno, Cal.

St. Joseph's Hospital, Alliance, Neb., has lately put into service a new addition erected at a cost of $40,000.

The Bedford County Medical Society, Bedford, Pa., is urging the erection of a hospital for Bedford and Bedford county.

The Nanticoke (Pa.) State Hospital held its first training school commencement last month, graduating three nurses.

A 35-bed hospital erected at Amory, Miss., by E. D. Gilmore has recently been opened, with Dr. C. R. Berry in charge.

The Whittington Sanitarium, St. Joseph, Mo., has been leased by the city and will be run hereafter as a city hospital.

A fine, new motor ambulance will be put into service by the Harrisburg Hospital, Harrisburg, Pa., shortly after January 1.

Professional and business men of Carson, Nev., have launched a movement for the building of a larger hospital in that city.

A new county hospital, erected at Neodesha, Kan., at a cost of about $35,000, has been receiving patients since December 1.

Miss Emma J. Keating, superintendent of the Oil City Hospital, Oil City, Pa., and Miss Mary J. Ames, assistant superintendent, have resigned. Miss Keating will return

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to her home in Rochester, N. Y. She has been connected with the Oil City Hospital for the last ten years.

The Baptists of Louisiana have acquired the Alexandria Sanitarium at Alexandria. They propose to spend $40,000 on improvements.

A contagious disease hospital presented to the city of Watertown, N. Y., by Mrs. Emma Flower Taylor was opened December 9.

Dr. G. H. Mammer and R. F. Bellaire, Le Mars, Ia., have purchased the City Hospital at that place and are planning to enlarge the building.

A campaign conducted by the Ohio Valley Hospital, McKees Rocks, Pa., to raise $20,000 for improvements has been successfully closed.

Dr. F. H. Lay, of Jackson, Cal., has purchased the Santa Maria Sanatorium, Santa Maria, Cal., and assumed control of the institution.

The supervisors of Waukesha county, Wis., are arranging to build a tuberculosis hospital for the county. A 32-bed building is planned.

Contract has recently been awarded by the Kansas City (Mo.) General Hospital for a new wing to cost, with equipment, about $100,000.

Steuben county, N. Y., will soon begin the erection of a tuberculosis hospital, for which a building fund of $30,000 was voted over a year ago.

Newton, Iowa, hopes to erect a community hospital in the spring. Efforts will be made to raise a fund of $50,000 for the building and equipment.

The trustees of the Eastern District Hospital and the Williamsburg Hospital, of Brooklyn, are considering a plan to unite the two institutions.

Officials and friends of the Rochester General Hospital, Rochester, N. Y., raised $25,000 for that institution in two days the early part of December.

The city of New Orleans opened a new 75-bed isolation hospital on North Rampart street December 15. Dr. Charles J. Ball is superintendent.

Mr. and Mrs. John R. Blood, of Amsterdam, N. Y., have made a gift of $20,000 to the Amsterdam City Hospital for the erection of a maternity ward.

Dr. Walter Lathrop has been reelected for his twentieth year as surgeon and superintendent of the State Hospital for Injured Persons, Hazelton, Pa.

Mrs. F. M. Beaty, superintendent of the City and County Hospital, Fort Worth, Texas, has tendered her resignation, to take effect January 1.

The Lancaster General Hospital, Lancaster, Pa., has awarded a contract for the erection of a laundry building to cost, with equipment, about $18,000.

The Ennis Sanatorium Company, a new corporation at Ennis, Texas, has invited bids for the erection of a hospital building estimated to cost about $20,000.

The New York State Board of Health is taking steps toward the establishment of a state laboratory. The plan includes the erection of a $65,000 building.

Settlement in a contested will case gives the town of Vinton, Ia., $50,000 from the estate of the late Virginia W. Gay for the erection and equipment of a hospital.

A new five-story wing to the Norwegian Lutheran Deaconess Home and Hospital, Fourth avenue and Forty-sixth street, Brooklyn, has lately been put into service.

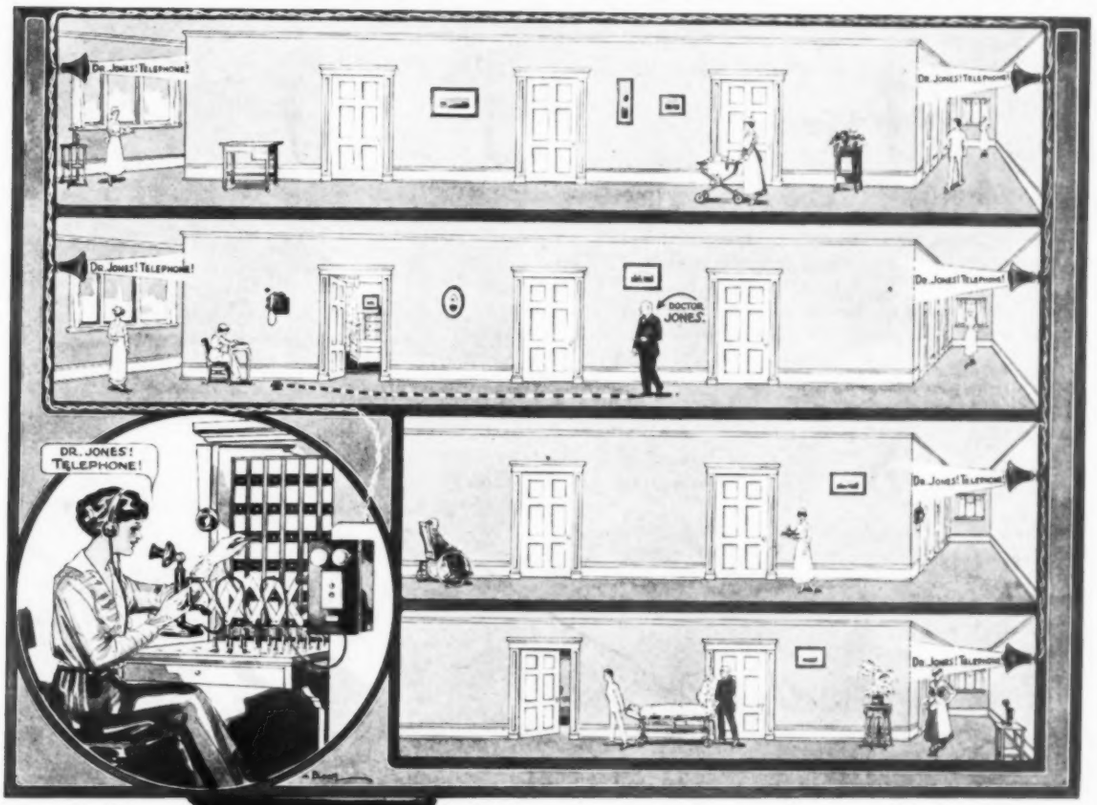
The Williamson Hospital Association has been incorporated for the purpose of establishing a hospital at Williamson, W. Va. The authorized capital is $50,000.

The Cook Hospital at Fairmont, W. Va., was burned the night of December 18. There were 50 patients in the building, but by heroic efforts all were safely removed.

A hospital will be erected at Shelbyville, Ill., next spring by the Shelbyville Memorial Hospital Association. The building planned is expected to cost about $35,000.

Complete plans for the proposed new building for the Easton Hospital, Easton, Pa., have been approved, and it

THE "STILL SMALL VOICE"



These hospitals have installed the "Still Small Voice" Hospital Call System. With their permission we refer you to them. If you want to read a real recommendation, write them.

American Hospital	Chicago, Ill.
Presbyterian Hospital	Chicago, Ill.
Mercy Hospital	Chicago, Ill.
Chicago College of Dental Surgery	Chicago, Ill.
Post-Graduate Hospital	Chicago, Ill.
Hahnemann Hospital	Chicago, Ill.
Lakeside Hospital	Chicago, Ill.
Washington Park Hospital	Chicago, Ill.
German Hospital	Chicago, Ill.
Wesley Hospital	Chicago, Ill.
Presbyterian Hospital	New York City.
Allegheny General Hospital	Pittsburgh, Pa.
Elizabeth Steele Magee Hospital	Pittsburgh, Pa.
Presbyterian Hospital	Pittsburgh, Pa.
St. Elizabeth's Hospital	Boston, Mass.
Massachusetts General Hospital	Boston, Mass.
Johns Hopkins Hospital	Baltimore, Md.
St. Louis Children's Hospital	St. Louis, Mo.
Nebraska M. E. Hospital	Omaha, Neb.
Christian Church Hospital	Kansas City, Mo.
German Hospital	Kansas City, Mo.
Cleveland City Hospital	Cleveland, Ohio.
St. Vincent Charity Hospital	Cleveland, Ohio.
Texas Baptist Memorial Sanitarium	Dallas, Texas.
Baptist Sanitarium	Houston, Texas.
University of California Hospital	San Francisco, Cal.
City and County Hospital	San Francisco, Cal.
City and County Hospital	St. Paul, Minn.
Evanston Hospital	Evanston, Ill.
Royal Victoria Hospital	Montreal, Canada.
Philippine General Hospital	Manila, P. I.
Denver Children's Hospital	Denver, Colo.

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Let us send you the "STILL SMALL VOICE" by prepaid express on trial. Test it thoroughly. Show it to your Board—it will speak for itself. Let it do the proving—that you cannot afford to be without this perfect system, now that it is available. Remember, you are at full liberty to ship it back at our expense.

Note how one word, often a whisper, by the switchboard operator is repeated simultaneously on all floors of the hospital. Whether it is a Doctor, an Intern, a Nurse, or anyone else, they are advised instantly, and with this system **they unfailingly answer immediately.** Invaluable in emergencies. No lost motion—no confusion—**more quiet.** Only the person wanted answers the call. Test all these features without obligation.

"Still Small Voice" Hospital Call System

It is necessary for us to limit this most liberal offer of paying express charges both ways to apparatus asked for before March 1, 1917. Remember, not one cent to pay for this equipment until you decide to keep it. And the entire cost then is absurdly small.

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With the bran in flake form—extra efficient.

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Foods 25 per cent bran, to make them effective.

Tempting foods, of which no one ever tires.

Varied foods, all with the same bran content.

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Rolled Wheat with Bran Flakes

Soft, flavory wheat rolled into luscious flakes, hiding 25 per cent of unground bran. A famous breakfast dainty.

Pettijohn's Flour is 75 per cent fine patent flour mixed with 25 per cent tender bran flakes. To be used like Graham flour in any recipe; but better, because the bran is unground.

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ETHER PRO NARCOSI

This Ether Sulphuric for anesthesia is prepared by a recently patented process of purification by which all of the impurities that are ordinarily found in Ether are entirely removed.

Our product has a boiling point of 34° to 36° Centigrade, a specific gravity of .709 to .710 at 25° Centigrade; it leaves no residue on evaporation and will show negative results when tested for impurities.

OUR CLAIM IS THAT NO ETHER EQUAL IN PURITY HAS BEEN OFFERED TO THE MEDICAL PROFESSION UP TO THE PRESENT TIME.

This Ether is manufactured under a process protected by U. S. letters patent No. 1189602, July 4, 1916.

ALBANY CHEMICAL COMPANY

ALBANY, N. Y.

is the intention of the officials to start construction work early in the spring. The new hospital, with its equipment, will represent an expenditure of approximately $300,000.

The Alice Hyde Memorial Hospital, Malone, N. Y., has lately received donations which will insure the early erection of a contagious disease annex and a nurses' home.

The Swedish Hospital Association, a new organization at Turlock, Cal., has called for bids on the erection of a two-story brick building, estimated to cost about $10,000.

Mrs. Rebecca Williams, who died last November at her home in Bellefontaine, Ohio, left property valued at $140,000 for the erection and endowment of a hospital in that city.

A $100,000 bond issue for the erection of a tuberculosis hospital at Mineola, N. Y., by Nassau County has been sold for $101,970 and the construction work will be started soon.

Twenty citizens of Holland, Mich., have subscribed $10,000 toward the establishment of a community hospital, and it is believed that at least $5,000 more will be secured.

The central building of a tuberculosis hospital being erected near the town of Stittin, Wis., by Marathon county will soon be ready for patients. It will have a capacity of 40 beds.

Fifty barrels of potatoes was the result when the 12,000 public school children of Bayonne, N. J., were recently requested to donate one potato each to the Bayonne Hospital.

The erection of a tuberculosis hospital near Grand Rapids, Minn., for Itaska county, will be started early in the spring. A $50,000 bond issue has been voted to establish the institution.

Dr. E. H. Bullock, of Edina, Mo., has been appointed superintendent of State Hospital No. 2 at St. Joseph. Dr. W. L. Whittington, present acting superintendent, will be Dr. Bullock's assistant.

A campaign which has for its object the raising of $250,000 for the treatment and care of victims of the recent infantile paralysis epidemic was launched in New York city early in December.

The Children's Hospital of Philadelphia will receive $25,000 and the Christ Church Hospital of that city, $10,000, under the recently probated will of the late Louis S. Fiske, a retired wool merchant.

Crowded conditions at St. Joseph's Hospital, Deer Lodge, Mont., make larger quarters imperative, and plans are being drawn for a new home for the institution to be erected in 1917 at a cost of $85,000.

The City and County Hospital, Hobart, Okla., has lately moved into larger quarters. The institution was established last summer by local business men and physicians, and soon outgrew its first home.

According to the Billings (Mont.) *Gazette*, the hospital facilities of that city are to be extended in the near future by additions to the St. Vincent's Hospital or the erection of an entire new plant for the institution.

Fire starting from a spark blown from a flue to the roof caused a loss of $5,000 at the Arkansas City Hospital, Arkansas City, Kan., December 7. The damaged part of the building will be rebuilt of fireproof material.

The Leonard Hospital, Troy, N. Y., has a new x-ray department. The equipment is a gift from the board of women managers, the purchase fund having been raised by a series of card parties and other social affairs.

The Penn Yan Hospital Association has been organized at Penn Yan, N. Y., for the purpose of establishing a community hospital, and forty-eight persons have subscribed $100 each as a nucleus for a building fund.

St. Mary's Hospital, East St. Louis, Ill., has recently opened a free clinic for the treatment of diseases of the ear, nose, and throat, and it is the intention of the hospital authorities to extend the scope of the clinic in the near future.

The Evanston Hospital, Evanston, Ill., is promised a

Jiffy-Jell

The Supreme Dessert

ASK FOR TRIAL PACKAGES FREE TO HOSPITALS —BY PARCEL POST

A Rare-Grade Gelatine, Sweetened and Colored. True Fruit-Juice Flavors, Each in a Sealed Vial

Approved by Dr. Allyn under Westfield Standards. Approved by Dr. Wiley of Good Housekeeping Bureau.

Mr. Otis E. Glidden, the gelatine expert, has perfected a new dessert. It is the final result of 17 years devoted to gelatine desserts.

He employs a rare-grade gelatine, twice as costly as the common grades. To insure this grade in quantities, he has formed a partnership with the men who make it.

Together they have built, amid Waukesha Springs, a white enameled kitchen—the model food plant of America.

There Jiffy-Jell is made in the daintiest way. And packed by machines in damp-proof packages, so it comes to the user in ideal condition.

MADE OF FRUIT

The flavors are made from the fruits themselves. Not one is artificial. They are made by concentrating the ripe-fruit juice.

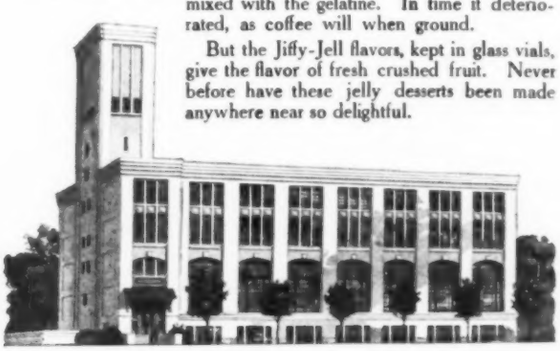
So a Jiffy-Jell dessert tastes like the fruit itself. It has wondrous zest and natural flavor. You never have tasted a jelly dessert even half so good, we think.

FLAVORS IN VIALS

To protect these flavors, each is sealed in a vial. So it comes to the user fresh.

In the old way of making quick, fruity desserts the flavor was mixed with the gelatine. In time it deteriorated, as coffee will when ground.

But the Jiffy-Jell flavors, kept in glass vials, give the flavor of fresh crushed fruit. Never before have these jelly desserts been made anywhere near so delightful.



NO SCALDING

Jiffy-Jell is made, like other gelatine desserts, by simply adding boiling water. Then the jell is left to cool.

But you add the flavor from the vial when the jell has partly cooled. So the flavor isn't scalded. It retains the fresh fruit tang. That is impossible, of course, when the flavor comes mixed with the gelatine.

FIFTY QUICK DESSERTS

Jiffy-Jell places at your instant command at least fifty quick, fruity desserts. Some are made with flavor only. Some use fruit, or nuts, or chocolate sauce. And some are topped with whipped cream.

In Jiffy-Jell the gelatine comes ready-sweetened, and in the proper color. Simply add the boiling water, the flavor, and whatever else you like. One package makes six or eight dishes.

We publish a book of tried recipes. Ask us for a copy—free. It will show you dozens of appetizing dainties which Jiffy-Jell will make. And make them better—at least twice better—than former gelatine products.

We also send to hospitals, on request, enough Jiffy-Jell to try.

When you order elsewhere, be sure to get the package shown below. Otherwise you won't get this dessert.

SEVEN FRUITY FLAVORS

Raspberry, Strawberry, Cherry, Orange, Lemon, Pineapple, and Lime for Garnish.

Two packages for 25 cents.

Also WAUKESHA GELATINE

Plain—Sparkling—Clear

This same rare grade gelatine unsweetened and unflavored is also put up in packages and sold under the name of

WAUKESHA GELATINE

Each package contains two envelopes. Each envelope makes a quart. The package also contains color tablets and lemon acid, to be used if wanted.

Try Waukesha Gelatine for soups, gravies, and all recipes calling for plain gelatine.

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Chemical analyses and exhaustive comparative clinical tests have proven "M. C. W." **Ether for Anesthesia** to be **superior in every respect,** and led to its extensive use in many of the largest and foremost hospitals in this country and Canada.

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The biggest selling powder polish in the world. The standard for over 34 years

The best polish obtainable for **brass, copper,** zinc, aluminum, tile, or marble.

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It is absolutely *Noncombustible*

Guaranteed never to deteriorate

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Makers of "U. S. Metal Polish Paste" for the finer class of metal and plated ware.

gift of $125,000 by James A. Patten, of Chicago, contingent on the raising of an equal sum by popular subscription, the money to be used in enlarging and remodeling the hospital.

Miss Florence Cameron, for the last three years superintendent of the Beaver Valley General Hospital, New Brighton, Pa., will sever her connection with that institution January 1 to become superintendent of a hospital at Ravenna, O.

Miss Ida M. Thompson, a graduate of the York Hospital and Dispensary, York, Pa., sailed November 30 for Manila, where she will become a missionary nurse in St. Luke's Hospital, operated under the auspices of the Episcopal Church.

Construction work will soon be started in the town of Pomfret, near Cassadaga, N. Y., on a tuberculosis hospital for the establishment of which the sum of $150,000 was bequeathed to Chautauqua county by the late Mrs. Elizabeth Newton.

Dr. H. P. Hill has been appointed superintendent of the new Robert B. Green Memorial Hospital to be opened in San Antonio, Tex., about January 1. The hospital was erected by Bexar county and the city of San Antonio at a cost of $250,000.

Mr. F. C. Hilker, superintendent, and Mrs. J. S. Hilker, superintendent of the training school at the Pottsville Hospital, Pottsville, Pa., will assume the duties of the same positions at St. John's Riverside Hospital, Yonkers, N. Y., January 1.

A campaign which had for its object the raising of $50,000 for the erection and equipment of a community hospital has been successfully closed at Independence, Iowa. R. B. Raines is president and M. O. Fouts secretary of the hospital association.

A new building, to be known as the Martha G. Ripley Memorial, was dedicated by the Maternity Hospital, Minneapolis, Minn., December 9. The structure is said to have cost $50,000, and to contain, in addition to other facilities, 20 beds for patients.

The Presque Isle General Hospital, Presque Isle, Me., has outgrown its present quarters and steps are being taken toward the erection of a new home for the institution. Accommodations for 35 to 40 patients will be provided in the new building.

The Mizer Sanatorium, Coshocton, Ohio, has been sold by Receiver Dr. H. R. McCurdy to French V. Mizer, who will erect a new $25,000 home for the institution next summer. Mr. Mizer, it is said, expects also to establish branch sanatoriums in other cities.

The will of the late Joseph Faulkner, of Hamilton, Mass., which was recently filed for probate at Salem, Mass., contains a bequest of $5,000 to the Lynn Hospital, to be known as the Faulkner Fund, the income to be used for the general purposes of the hospital.

A tuberculosis sanatorium erected near Lake Park, Minn., jointly by Clay and Becker counties was opened December 3. The institution represents an expenditure of $52,000 and has a capacity of 32 beds. It has been named the "Sand Beach Sanatorium."

The Philadelphia Department of Public Health and Charities is furthering a movement for the inauguration of an annual "hospital week," such as has been established in London and other cities, for the raising of funds for the hospitals treating the sick poor.

The Sisters of Charity of Nazareth, whose mother house is at Nazareth, Ky., have definitely decided to build a hospital at Bend, Oregon, and Beezer Bros., architects, of Seattle, have been commissioned to draw plans for a $75,000 building to house the institution.

The order of Knights and Ladies of Security, the headquarters of which are at Topeka, Kan., proposes to erect a $250,000 group of buildings to consist of a hospital, an orphanage, and a home for aged persons. Various western cities are being considered as locations.

Rockwood, Tenn., is to have a hospital. Plans for the building have been completed and some of the construction material is already on the ground. The institution will be

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and Dietitians—
that we may demonstrate the merits
of this all wheat food to you, we
will gladly ship (prepaid) an ample amount of

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to any such person expressing a willingness
to give this truly wonderful food a trial.

Wheatena is made of the best winter wheat procurable, and retains all of the sweet nutty flavor of the plump and wholesome grain.

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Rheumatism, Gout, Synovitis

Fibrous Ankylosis, Traumatic Arthritis, Sprains, Dislocations, Fractures, etc., are treated with marvelous success with the

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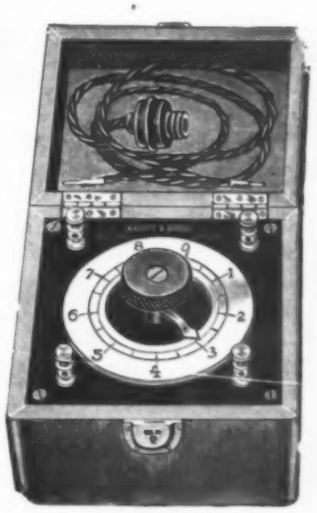
THOROUGHLY WELL MADE AND SCIENTIFICALLY CONSTRUCTED

HOSPITAL AND SURGEON'S CAUTERY

For Electric Current



The most satisfactory and indispensable apparatus ever devised for cauterizing, especially for the general surgeon. Used in more than 700 hospitals.

Absolutely "fool-proof." Does away with the use of Benzine. A working addition to the Operating Room with little expense.

Heavy Cautery Knife especially devised for all incising and general use. An important instrument for cauterizing flat surfaces to prevent hemorrhage. Cautery knives are aseptic, with mineral handles, and can be boiled indefinitely without injury.

Send for descriptive circulars and prices of both these apparatus

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Extra-Grade Oat Food

Quaker Oats dominates—all the world over—because it is flaked from queen grains only.

We discard all the puny grains, starved and insipid. The result is, we get but ten pounds from a bushel.

But another result is a luxury dish—flavory and fragrant—in which millions of children delight.

Quaker Oats

Large, Luscious Flakes

We cannot better the oat, because nature makes it perfect. But we can, by selection, get the cream of the oats, and make the dish doubly attractive.

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Chicago (1487)

a private one, headed by Dr. Charles Wilson. Accommodations for 15 patients will be provided.

The Sioux Valley Hospital, a new institution with a capacity of 35 beds, will be opened at Cherokee, Iowa, January 15. The building is a modern structure of two stories and basement, and the money for its erection and equipment was raised by popular subscription.

The California State Board of Health will ask the state Legislature to appropriate $500,000 for the erection and equipment of a psychopathic research hospital to be located in San Francisco and conducted as an adjunct of the medical department of the University of California.

Dr. W. Scott Farmer, of Cookeville, Tenn., has been appointed superintendent of the Central Hospital for the Insane, Nashville, Tenn., succeeding Dr. A. E. Douglas, who has served the institution as superintendent and assistant superintendent for the last fifteen years.

Ground was broken in Los Angeles December 2 for a hospital to be erected by the Loma Linda (Cal.) College of Medical Evangelists, a Seventh-Day Adventist institution. The building is planned along up-to-date lines and will require an expenditure of approximately $100,000.

Dr. F. K. Camp, superintendent of the Wesley Hospital, Oklahoma, Okla., has announced that construction work on a $75,000 addition to this hospital will be started early in the spring. With the completion of the building, the capacity of the institution will be increased 75 beds.

St. Paul's Sanitarium, Dallas, Texas, conducted by the Sisters of Charity of St. Vincent de Paul, opened in December a new $200,000 addition, providing accommodations for 90 patients in private rooms and 36 in 6-bed wards. The equipment is said to be unusually complete and up to date.

The people of Mohave county, Arizona, want a county hospital, and at a recent election adopted a resolution petitioning the state Legislature to pass a law authorizing county boards to establish hospitals in which persons either able or unable to pay for treatment may be accepted.

Dr. S. W. Pryor, Chester, S. C., opened a new $60,000 home for his private hospital in that city December 12. The new structure replaces a building destroyed by fire about a year ago. It has a capacity of 50 beds, and is said to be one of the best equipped hospitals in that part of the South.

Mr. and Mrs. I. C. Shingle are retiring from the management of the Roosevelt Hospital at Berkeley, Cal. Mr. Shingle will devote his time to x-ray work in Oakland and San Francisco, being associated with Dr. L. A. Martin. The new head for the Roosevelt Hospital has not been announced.

Plans have been drawn for an addition to St. Francis Hospital, Peoria, Ill., to cost about $100,000, and the construction work will probably be started in the spring. The building will be six stories high and will contain accommodations for 97 patients, nearly doubling the capacity of the hospital.

The Harkness Memorial Hospital, which has been under construction at Bellvue, Ohio, for several months, is about completed and will be ready for patients early in the new year. The building is a two-story and basement structure, 120 by 40 feet, and will accommodate about 30 patients—some in private rooms.

The New York counties of Rensselaer, Warren, and Livingston will build a tuberculosis hospital in the near future. More than half of the counties of the state have now established or arranged to establish such hospitals, and in no instance has the proposition been rejected when submitted to the voters.

The Hayes Hospital at Carson, Nev., has lately been taken over and is being operated by an association composed of a number of the leading citizens of the city. Miss J. B. McLeod, of Reno, a graduate of Wesley Hospital, Chicago, is in charge as superintendent, with Mrs. W. Knippenberg, of Carson, as matron.

Miss Susan C. Francis, superintendent of the Jewish Hospital, Philadelphia, was reelected president of the Graduate Nurses' Association of Pennsylvania at the an-

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From the very start we realized that the success of CALIFO BRAND Food Products among the Hospitals and like institutions of the country did not rest alone in the quality, taste, and preparation of the first order, but also in maintaining that standard of higher quality, superior taste, and better preparation which the first order always establishes in the mind of the buyer.

Consequently we selected our many kitchens from those already established in the heart of fields noted for producing a uniform crop of fruits and vegetables year after year—products of a character better suited to hospital requirements.

That we have been successful in both purpose and effort is evidenced by the fact that CALIFO BRAND Food Products are now used in over eleven hundred Hospitals, with an increasing number of new users each year.

CALIFO BRAND Food Products were good the time they were first put on the market. They are as good today as then—and better.

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ALSO EXCELLENT FACILITIES FOR DELIVERIES ON EITHER ATLANTIC OR PACIFIC COASTS

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"PROVEN BEST BY THE CAN-OPENER TEST"

A rich and refined looking tablet of imperishable bronze to appropriately commemorate those larger gifts to the hospital this Christmas

Artistically executed tablets as low as seven to ten dollars

Our little booklet, "Commemorative Tablets," gladly sent on request

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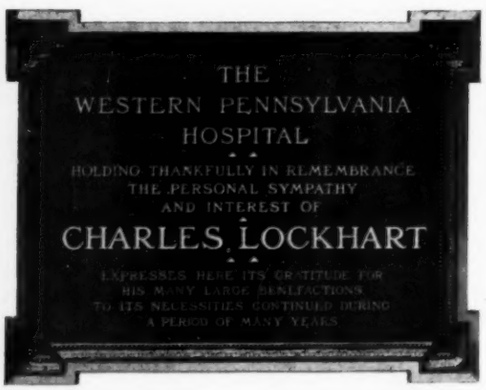
Historical Bronzes



nual convention of the association held in Pittsburg November 8, 9, and 10. Miss Williamina Duncan, of Pittsburg, was reelected secretary and treasurer.

The Hartford Hospital, Hartford, Conn., has recently opened a handsome new brownstone addition, providing new quarters for its administration offices and accommodations for 37 private patients. The building is four stories high and covers a ground space 138 by 44 feet. It was erected and equipped at a cost of about $150,000.

Mrs. Judson Ball (nee Hinde), of Mt. Vernon, Ohio, has announced her intention to build a hospital in that city as a memorial to her parents and her son, the late George Ball. The institution will be known as the Hinde-Ball Mercy Hospital, and will be conducted by the Sisters of Charity of Nazareth, Ky. Construction work will be started next spring, it is said.

Miss A. M. Binkley, of Canton, Ohio, formerly superintendent of the Martin's Ferry Hospital at Martin's Ferry, in the same state, has accepted an appointment as superintendent of the new Amherst Hospital, Amherst, Ohio. Miss Binkley is a graduate of the Protestant Hospital, Columbus. The Amherst Hospital was built by local physicians at a cost of about $25,000.

PUBLIC HEALTH SERVICE BUSY

Under Present Heads the Department Has Become One of Prime Importance—Some of Its Activities

Complete refutation of the claim that the Government does not concern itself with the loss from preventable disease is contained in the annual report of the surgeon-general of the Public Health Service submitted to Congress December 7. Activities ranging from the prevention and cure of blindness, scientific studies of pellagra, the protection of the health of industrial workers, the prevention of the introduction of typhus fever, investigations of child labor and health insurance, the eradication of communicable diseases, and the control of the pollution of navigable streams are recorded and demonstrate conclusively that the national Government is vitally concerned in the health of its citizens.

The most striking achievement of the year relates to pellagra, an affliction which in certain states destroys more lives than tuberculosis. Pellagra is no longer a disease of mystery, as the Public Health Service has clearly shown that it is caused by a restricted diet, and that it may be prevented and cured by means of a properly balanced ration. The practical application of this knowledge has already resulted in a material reduction in the prevalence of this affliction in all parts of the country, and it is confidently believed that in another year even more marked improvement will be observed.

In the eradication of trachoma such marked success has been obtained that the methods followed, the converting of private residences into small hospitals and the holding of free open-air clinics, have been adopted by the Egyptian Government. During the year 1,700 persons were operated upon for the relief of partial or complete blindness, nearly 2,000 received hospital treatment, while more than 19,000 were treated at hospital dispensaries and clinics. When it is realized that a large proportion of these people were doomed to years of suffering, terminating in at least partial blindness, and that they have been restored to lives of usefulness, in some instances even being taken from county poorhouses, where they had been public charges for the greater portion of their days, the importance of this most beneficent work can be imagined. The total cost of this undertaking, including the remodeling of buildings and every expense in connection with the

"Wear-Ever"

Aluminum Cooking Utensils

are the standard equipment of the U. S. Marine Hospitals and the following other hospitals:

Cincinnati General Hospital	Cincinnati, Ohio.	Elizabeth Steel Magee Hospital	Pittsburgh, Pa.
St. Luke's Hospital	Chicago, Ill.	Manhattan State Hospital	New York, N. Y.
Mount Sinai Hospital	New York, N. Y.	Allentown State Hospital	Allentown, Pa.
Christ Hospital	Cincinnati, Ohio.	Brooklyn Hospital	Brooklyn, N. Y.
Letterman General Hospital	San Francisco, Cal.	State Hospital	Wernersville, Pa.
Lakeside Hospital	Cleveland, Ohio.	King George Hospital	Winnipeg, Man.
Barnes Hospital	St. Louis, Mo.	Hamilton General Hospital	Hamilton, Ont.
Presbyterian Hospital	New York, N. Y.	Battle Creek Sanitarium	Battle Creek, Mich.
St. Mary's Hospital	Rochester, Minn.	Army and Navy General Hospital	Hot Springs, Ark.
Touro Infirmary	New Orleans, La.	City and County Hospital	St. Paul, Minn.

"Wear-Ever" utensils are made to withstand hard usage—from thick, specially-hardened sheet aluminum. They are safe and sanitary—safe, because they have no lining to break or chip and are not affected by food acids—and sanitary, because they have no cracks, seams, or joints in which particles of food can lodge. They give enduring service and are the most economical utensils you can buy.

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The Aluminum Cooking Utensil Co.

New Kensington, Pa. East St. Louis, Ill. Portland, Ore.

"Wear-Ever" utensils are made in Canada by Northern Aluminum Company, Limited, Toronto, Ontario

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are a step in advance of all other uniforms. They are ***pre-shrunk*** in mother's way. The goods are washed and ironed by hand in the piece before the garments are cut, and are thus thoroughly shrunken. Every yard of cloth in the ***pre-shrunk*** garment is standard goods of many years' standing. You know just the quality you are buying.

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Every PRE-SHRUNK garment is sold under a guarantee. If for any reason whatsoever you are not perfectly satisfied, you are to return the garment at our expense. We can do this because of the universal satisfaction we have been able to give. Our first customer for ***pre-shrunk*** uniforms is still buying of us.

Our Uniforms and Aprons have been officially adopted by the Lunacy Commission of the State of New York and as the official uniform to be worn in all the hospitals for the insane in this state. They are also worn in the hospitals for the insane in the states of Maine, Massachusetts, and Connecticut. The Seventh Day Adventists' Society has but recently adopted the ***pre-shrunk*** uniform and apron for its allied hospitals, and our garments are used by many private and public hospitals throughout the United States.

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to the hospital or private nurse at wholesale prices. We also manufacture Men's White Uniforms and Surgeons' Gowns.

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A Safe Cleanser

People sometimes think that a chemical powder which removes stain from a toilet bowl may injure the finish of the bowl or the pipe connection.

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can be used freely on a porcelain bowl for years and not have the slightest bad effect. All good bowls are "acid - proof." This is essential because only an acid action will dissolve lime formation.

The reaction of ***Sani-Flush*** in water is such as to break down the calcareous deposit which attaches to the bowl and on which stains and sediment lodge. There is no action on the porcelain, and the effect on the lead collar and iron pipe is negligible.

For prices and other information, write

THE HYGIENIC PRODUCTS CO.
628 Walnut Avenue, South, CANTON, OHIO

feeding and care of patients, was less than $39,000 for the year.

Increased interest was shown by the Government in the health of rural dwellers, and Congress has recognized, by making an appropriation for studies in rural sanitation, that the welfare of the country resident is not to be neglected. During the past three years 80,270 homes in fifteen different counties of thirteen states were visited and complete sanitary surveys made of the premises. In every instance definite recommendations were given to remedy such evils as existed, as, for example, the pollution of wells, the presence of disease-bearing insects, and the improper disposal of excreta. In addition, 22,234 homes were revisited, mostly at the request of the owners, in order that the Government agents could inspect the improvements instituted. Wherever this method of bringing the lessons of sanitation directly to the rural dweller has been followed, a marked reduction has been observed in the prevalence of typhoid fever, hookworm, malaria, and other preventable diseases.

Attention has also been given to the health of the children of the nation, more especially to rural school children. Over 32,000 children attending the public schools were examined during the year in order to determine their mental status, and the causes and percentage of mental retardation and deficiency. In addition, 7,000 physical examinations were completed for the determination of physical defects.

The health of industrial workers has been safeguarded to a greater extent than at any time in the past. Studies have been made of the occupational hazards of steel workers in many of the leading industrial establishments of the country, and unsanitary and harmful conditions corrected. In the zinc mines of Missouri methods have been adopted which should go far toward eradicating tuberculosis from that district. Investigations of child labor and of health insurance have also been made.

Better provision for the health of travelers has been obtained by safeguarding the water supplies of common carriers and through the promulgation of regulations governing the transportation of persons suffering from communicable diseases.

Energetic efforts have been made to prevent the introduction of all communicable diseases and to control those already with us. Typhus fever has been combated at all points on the Mexican border, and disinfection plants established, where the clothing and persons of all incoming aliens have been disinfected. At one station alone, El Paso, Texas, 26,000 persons were inspected and treated in such a manner as to insure their freedom from this highly fatal infection.

Plague eradicative measures at New Orleans have been continued. Over 371,000 rodents, the carriers of plague infection, were either trapped or killed and more than 100,000 were carefully examined. No human case of the disease has occurred during the year. Measures for the control of typhoid fever, Rocky Mountain spotted fever, malaria, and other infections have been continued as heretofore, and the results obtained have been most gratifying.

In only a single field, the medical inspection of immigrants, has the work of the Public Health Service shown any diminution during the year, but this has been compensated for by the more thorough examination accorded. A total of 481,270 aliens were examined for the purpose of determining physical and mental defects. Of these 16,327 were certified for deportation, proportionately a greater number than has ever been recorded. The percentage of mental defectives certified is also steadily increasing.